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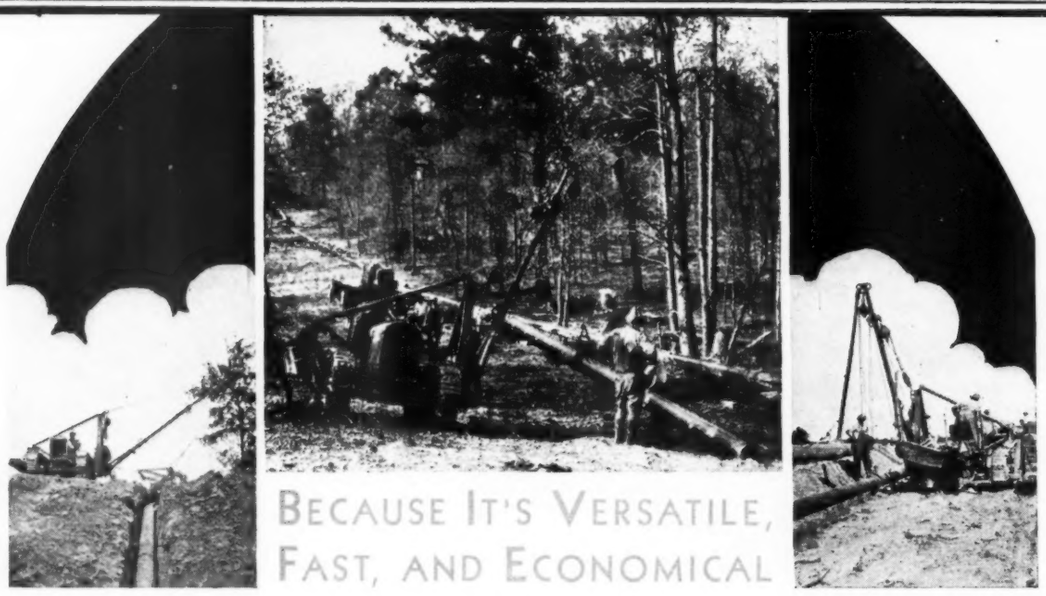

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The Oil and Gas Journal

PRODUCING REFINING ENGINEERING MARKETING

VOL. 29. NO. 28. TULSA, OKLAHOMA, NOVEMBER 27, 1930

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Producers Within Sight of Their Goal

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Achievement of Curtailment Program Should Result in Readjustment of "Distress" Crude Price Schedules

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

By Andrew M. Rowley

Crude oil production in the United States last week averaged within 36,630 barrels of the figure of 2,233,500 barrels recommended by the Economics Committee of the American Petroleum Institute. On Tuesday of this week the Texas Railroad Commission ordered a further curtailment of production in Texas during the next 60 days which, if made entirely effective, will mean a reduction of about 70,000 barrels daily from the output of 750,000 barrels daily previously permitted there. Consequently, it seems reasonable to assume producers in the United States will within a very short time bring production down to the point recommended.

It is generally conceded present prices for crude oil are below actual cost of production and that these low prices are not due so much to overproduction of the raw material as to the extremely low prices prevailing for gasoline. Producers naturally expect that when they have done their part in carrying out the program recommended for the industry both by the Committee on Economics of the Federal Oil Conservation Board and the committee of the American Petroleum Institute, an effort will be made to re-establish a living price for crude oil.

Better prices for crude oil and gasoline must prevail before distress conditions existing among many producers and refiners can be alleviated. Crude oil prices are lower than they have been in 15 years despite the fact costs have risen appreciably due to deeper drilling. Consequently, it is inconceivable that anyone, including the public and the Government, could object to crude oil prices which would permit operators to obtain at least a very small return upon their investment. Such a return is not possible under present price schedules.

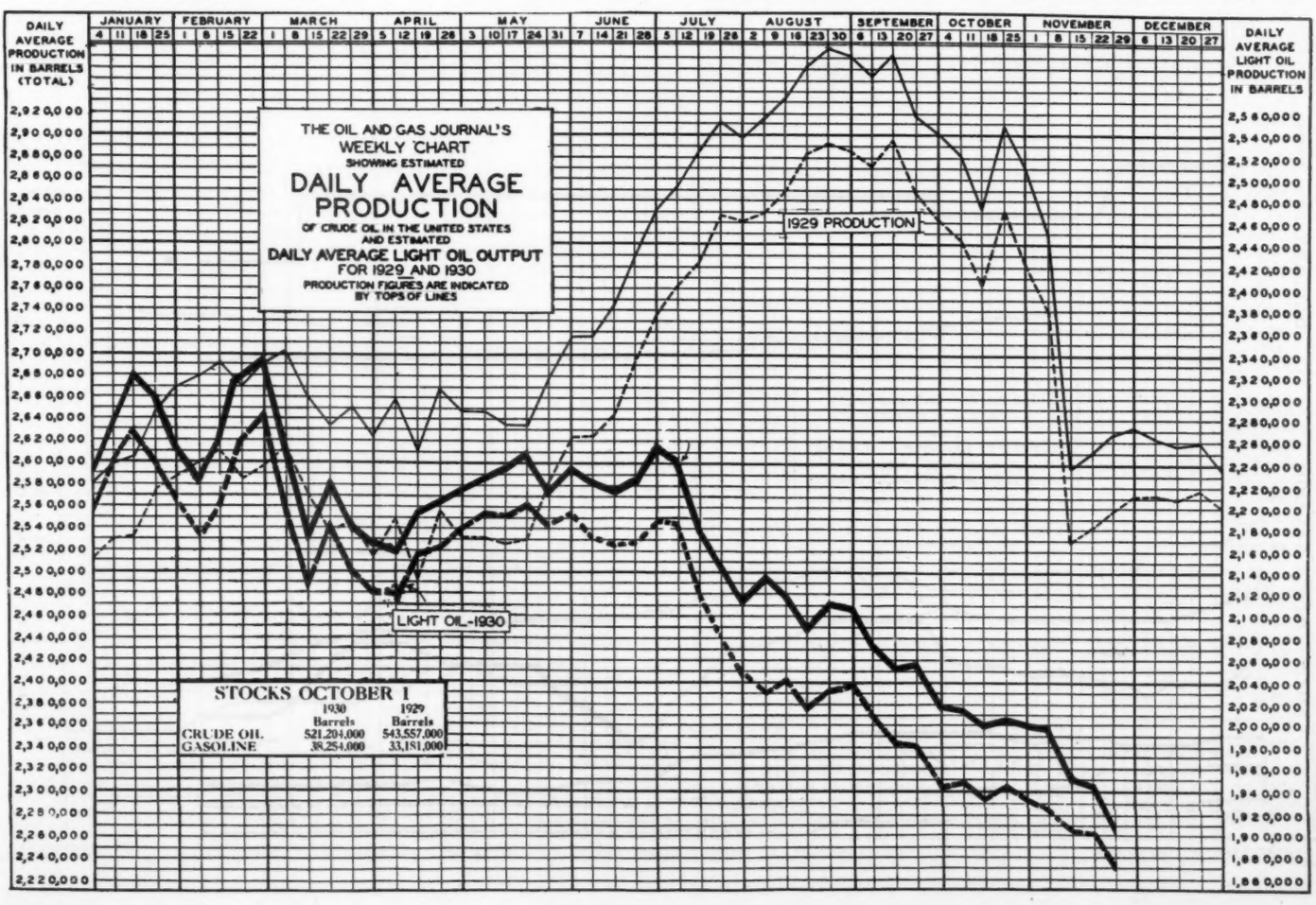
With the goal in their part of the program almost reached by the operators it seems the time has arrived when earnest consideration should be given by leaders in the industry to a readjustment upward of the crude oil price schedules.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended November 22, and a comparison with the previous week follows:

	Nov. 22		Nov. 15	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	73,320	.....	84,985	.....
Seminole-St. Louis	168,215	.....	173,550	.....
Remainder of State	242,380	.....	247,380	.....
Total Oklahoma	483,915	.....	505,915	.....
West Texas—				
Hendricks	57,015	.....	61,370	.....
Yates	102,825	.....	106,185	.....
Remainder	108,779	.....	108,493	.....
Total West Texas	268,619	.....	276,048	.....
North Louisiana	38,835	5,280	38,730	5,310
Arkansas	16,170	35,735	16,230	35,710
North Central Texas	104,919	.....	105,402	.....
Texas Panhandle	75,868	.....	75,060	.....
East Central Texas	41,963	.....	41,529	.....
Kansas	109,185	.....	111,510	.....
Total Mid-Continent area	1,139,474	41,015	1,170,424	41,020
Gulf Coast	.....	180,539	.....	180,479
Southwest Texas	.....	89,581	.....	97,844
Eastern	112,000	.....	113,000	.....
Rocky Mountain area	102,021	.....	101,657	.....
California—				
Santa Fe Springs	93,750	.....	96,000	.....
Long Beach	97,500	.....	99,500	.....
Playa Del Rey	40,000	.....	37,500	.....
Elwood	41,000	.....	33,000	.....
Ventura Avenue	46,500	.....	46,500	.....
Kettleman Hills	24,750	.....	25,500	.....
Remainder of State	177,000	85,000	177,500	86,000
Total California	520,500	85,000	515,500	86,000
Total United States	1,873,995	396,135	1,900,581	405,343
Grand total	2,270,130		2,305,924	

Total Decrease 35,794 Bbls.; Light Oil Decrease 26,586 Bbls.



Watchful Waiting in Oklahoma Market

Gasoline From Scattered Refineries Offered at Prices Below Those Quoted by Large Companies Still a Disturbing Factor

By W. T. Ziegenhain

Watchful waiting appears to be the settled policy of both refiners and jobbers regarding the Oklahoma refined oil market and the past week yielded nothing to indicate the trend of prices over the immediate future. The offering of relatively small volumes of gasoline from scattered refineries, at prices from one-half to three-quarters cent below the quotations of the larger refiners continued to be the disturbing factor. An effort was made during the week to bring quotations in the north central group of refiners up to 4¾ cents for U. S. Motor gasoline and the Oklahoma refiners were expected to go to this as their minimum, but the success of the movement will have to be judged after a longer working period.

The situation is admittedly weak, but lower prices are not expected to develop unless it becomes evident that crude prices will be further reduced. This seems less likely each week as crude production declines but some persist in the belief that another cut is inevitable if some refiners continue to be able to buy crude below the posted price, as is being done in the Wichita Falls, Tex., area and at a few scattered points in Oklahoma.

What is true of the gasoline market generally applies to the rest of the list of products. Natural gasoline was in a position a week ago to advance but prices are now wavering partly as a result of the uncertainty of the refinery gasoline market and partly because the BB and C grades are being offered in increasing volumes without a corresponding increase in the demand. Fuel oils and lubricating oils were also freely offered at last week's price levels. Bright stock demands were particularly weak.

REFINED MARKET BAROMETER

Nothing particularly encouraging developed in the general refined oil market during the past week. Only scattered price recessions were made but jobbers remain reluctant to buy in quantity until the possibility of lower tank wagon prices and lower crude prices are further removed. The withdrawal of posted prices on gasoline and kerosene at the Gulf by the Export Petroleum Association has aggravated the Eastern Seaboard refinery market and disquieting news regarding the California retail and refinery markets has been added to this. Fuel oils and lubricating oils were offered at slight price concessions where large quantities were involved. Steam refined cylinder stock was quoted at lower prices in Pennsylvania and at Atlantic Coast refineries with additional weakness apparent in bright stocks throughout the Mid-Continent.

Mid-Continent—Lower natural gasoline prices reflected the general weakened position of the refinery gasoline price structure. The balance of the list remained unchanged.

Atlantic Seaboard—A reactionary tone developed in the Eastern market during the week and prices on fuel oils, lubricants and kerosene were lowered.

Gulf Coast—Export buyers insisted that gasoline was readily available at prices below those generally quoted at the Gulf and were successful in further reducing the level of prices there.

Pennsylvania—No price changes were made in the list of Pennsylvania refinery products but the general situation remained weak.

Chicago—Favorable weather has permitted a high rate of gasoline consumption to be realized in the North Central states but jobbers are withholding purchases to bare requirements, believing the market is still far from being stabilized.

California—No price changes resulted in the California refining area but general conditions do not reflect encouragement. Filling station prices are being reduced to abnormally low levels in a number of places and this has been reflected in the slow buying on the part of jobbers.

Gasoline

The larger refiners continued to quote 5 to 5¼ cents on 58-60 U. S. Motor gasoline while prices as low as 4⅛ cents were reported on scattered sales to brokers. The reports of abnormally low prices offered by export buyers proved to be a disturbing factor but many assert that these reports are simply part of a plan to drive prices still lower and they question whether any substantial volume of business has actually been done at the low prices reported.

A price slightly under 5 cents was recorded on a sale made to an export account for 60-62 400 endpoint gasoline moving out of El Dorado, Ark. This would bring the Oklahoma price equivalent, considerably below 5 cents. Some 400 endpoint gasoline has been quoted as low as 4½ cents in the past week with the 390 endpoint grade held at 4¾ to 5 cents.

Natural Gasoline

Although Grade A natural gasoline remained firm at 4¾ cents, the rest of the list weakened. AA natural is now available one-eighth cent below last week's price level and the B, BB and C grades are available at 4 cents. There is a strong possibility that quantity buying will be resumed by exporters in the future due to the fact they have been purchasing low-gravity refinery gasolines which will have to be blended with natural before moving them to foreign markets for consumption.

Kerosene and Distillates

All grades of kerosene remained sluggish and the quantity traded remained below normal. The better grades of distillates and furnace oils moved regularly, but the bulk of these shipments were on contract.

Fuel Oil and Gas Oil

Fuel oil prices remained unchanged during the week, but all grades were freely offered. Refiners have decreased their production in the Mid-Continent to conform with the lesser demand from industries and the railroads but stocks weigh heavily against any upturn of price trends. Many of the railroad contracts will be up for renewal shortly and the attitude the railroads take will determine largely the course of the future of fuel oil prices in Oklahoma.

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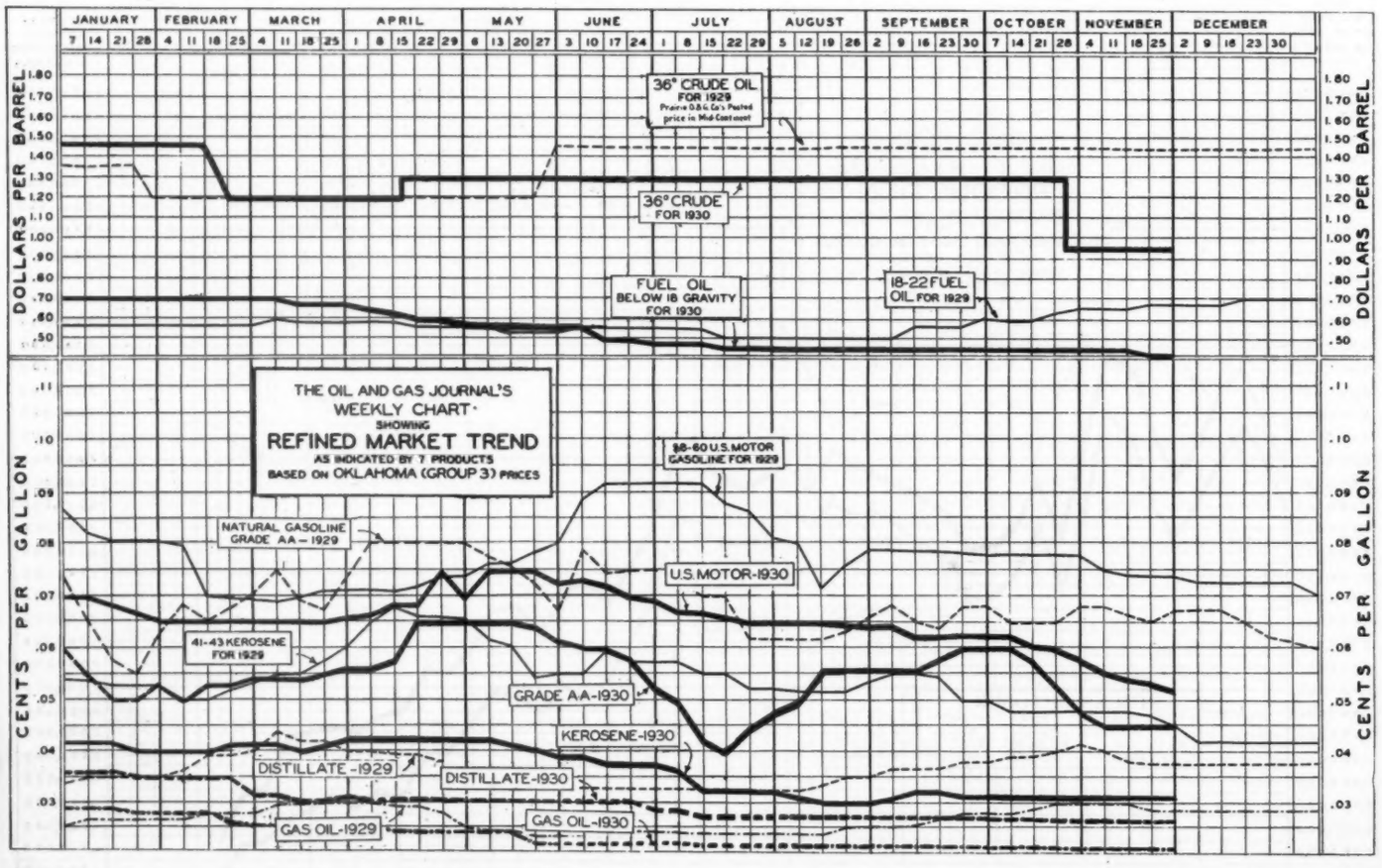

Texas Allowance Fixed at 680,238 Bbls.

State Railroad Commission Acts on Nominations Following Meeting of Operators and Hearing on Situation

By Special Correspondent

AUSTIN, Tex., Nov. 25.—The State Railroad Commission today made a new statewide oil proration order effective November 25 for a 60-day period, fixing the total of the State at 680,238 bbls., compared with the former 750,000 bbls. The order followed and adopted the basis suggested at the hearing November 22. The total was stated to be the demand for purchase and use of crude oil for the fields and areas embraced in the producing districts. The areas and production allowances were:

Panhandle, Gray, Hutchinson, Moore, Potter, Carson and Wheeler Counties, 64,616 bbls.; North Central Texas, Archer, Baylor, Clay, Cooke, Foard, Montague, Wichita and Wilbarger Counties, 52,395 bbls.; North Young County subdistrict, 4,850 bbls; West Central Texas, including Brown, Callahan, Comanche, Coleman, Eastland, Erath, Jack, Palo Pinto, Shackelford, Stephens, Throckmorton, Haskell, Runnels and South Young County, 24,142 bbls.; West Texas, Andrews, Crane, Crockett, Ector, Fisher, Glasscock, Howard, Irion, Jones, Loving, Mitchell, Nolan, Pecos, Reagan, Scurry, Taylor, Upton, Ward, Winkler Counties, 251,377 bbls.; East Texas, Anderson, Rusk, Cherokee, Navarro, Freestone, Limestone and Van Zandt Counties, 38,355 bbls.; Southwest Texas, Bexar, Caldwell, Atascosa, Guadalupe, Bastrop, Williamson, Milam, Medina, Live Oak, McMullen, Webb, Duval, Jim Hogg and Zapata Counties, 84,503 bbls. (this includes 30,000 bbls. daily for Darst Creek Field, Guadalupe County, previously fixed in special order); Gulf Coast, Orange, Jefferson, Hardin, Liberty, Chambers, Galveston, Harris, Washington, Austin, Fort Bend, Brazoria, Wharton, Matagorda, Refugio, Kleberg, Nueces, San Patricio and Bee Counties, 160,000 bbls. daily.

The order said: "Common carrier pipe lines are hereby authorized and empowered to make such sales, leases, loans or exchanges of facilities, equipment or oil, as may be necessary or convenient in carrying out the purpose of this order and in accomplishing or promoting the ratable or proportionate taking of oil from various properties within any given field. In this connection the Railroad Commission of Texas fully recognizes its powers and duties under an act of the legislature effective June 19, 1930, known as Senate Bill 25 and commonly known as the Common Purchaser Act, and the foregoing authority to common carrier pipe lines is granted with the view of facilitating the carrying out of this order and the enforcement of said act and the procurement of ratable takings by purchasers from different properties within any given oil field.

To Enforce Purchaser Act

Immediate steps will be taken by the Railroad Commission to enforce the Common Purchaser Act in every section of the State, Commissioner Lon A. Smith said Monday. Commissioner Smith said that while details had not been worked out, the commission probably would recall a field supervisor, and give him the task of traveling over the State investigating the common purchasers.

Meeting of Operators

The nominations made followed an executive session of the proration advisory committee and a conference of oil men called by Committee Chairman R. R. Penn held Friday in advance of Saturday's session by the commission to fix proration allocations.

A resolution was adopted by the operators' conference calling on the commission to enforce to the letter the common purchase act to prevent discrimination and equalizing takings. The committee also adopted a resolution asking that wells in prorated areas be limited to a daily maximum of 500 bbls. Resolutions of the North Texas Association were presented complaining of the treatment there, claiming that formerly it marketed 78,000 bbls. daily, was cut to 69,000 bbls. in proration orders and only 57,000 bbls. were actually accepted. It deplored the alleged lack of co-operation and asked that in the new prorations more of the burden of overproduction be placed on other districts, new wells, except offsets, be shut in and be prorated as part of the lease allowance and that all pipe lines be required to observe the regulations and aid in enforcing proration. Also that production be limited to wells of less than 1,000 feet to 100 bbls. daily; 1,000 to 2,000 feet, 200 bbls.; 2,000 to 3,000 feet, 300 bbls.; 3,000 to 4,000 feet, 400 bbls.; and more than 4,000 feet, 500 bbls. daily

President W. S. Farish of the Humble company suggested that the producers make allocations within the market limits and then the pipe lines could take them. Some said that was impossible as pipe lines took widely varying percentages of oil on different leases.

Penn Chosen Chairman

R. R. Penn, who was elected chairman of the conference, in describing the Prairie company's cancellation to take 9,000 bbls. in the Panhandle Field daily, said: "If we can not get ratable takings we will have a bad time."

President Tom Cranfill, of the Texas Independent Petroleum Association urged that they "do something and stop talking." The committee is asking the commission to have the pipe lines take ratably from each lease, give connections where reasonably located and if wells are too distant to permit owners to build lines to a connection with the pipe lines.

"The pipe lines cannot be forced to take more oil," he said, "but they can be asked to do it and it is to their interest to do it. It would soothe the sore spot in North Texas. If necessary, the commission could enforce the law."

He said pipe lines collaborating with the commission would suffer no danger from the antitrust laws and if they will give a helping hand as the producers bring themselves within market limits the trouble will end and the price threat be removed.

One speaker said North Texas margins were too high and that the owners are not reducing enough.

Originally the nominations were fixed at 596,450 bbls., with 122,400 bbls. added by an estimate of nonreporting takers, a total of 718,950 bbls. The committee had to cut this figure to 679,538 bbls. on notice of the withdrawal of the Prairie's nominations.

Chairman Penn said the Prairie could not be blamed, as it has 60,000,000 bbls. of oil in storage, once regarded as a great asset but now is a big liability and causing the present trouble. He predicted that the day of big tank builders and large storage was ended and that hereafter oil will be kept in the ground. He said the evils and losses in storage are taking their toll and in the future will have no part in successful oil operation

David Donoghue, technical adviser to the proration committee said the Prairie's withdrawal had rendered the situation acute in the Panhandle Field and if extended to other fields, as threatened, would add to its seriousness.

Bootlegging Responsible

Bootlegging of 17,000 bbls. of oil daily in North Texas was cited as the cause of the crash in crude and gasoline and that it was a cycle with further price reductions unless checked at once. This was oil from north of Newcastle which had been given no outlet and which had sympathetic additions in Wichita and Archer Counties. Its potential is 26,000 bbls. daily, but the opinion was expressed by Maj. John Gholson that 2,600 bbls. ratable daily would be satisfactory and would end a dangerous condition.

Mr. Penn said this bootleg oil was really the cause of the price crash as it was sold to small refineries at less than the market price and they disposed of the gasoline at cut prices with the result that tank wagon gas and crude prices went down. Even the cheapness of the

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Prairie Is Curtailing Its Purchases

Withdraws as a Crude Oil Buyer in Texas Panhandle, Voshell, Kansas, and Cuts Its Runs in Oklahoma City

By James McIntyre

The Prairie Oil & Gas Co. threw a few bombshells into the Mid-Continent producing industry by announcements made within the past week as to its immediate future crude oil purchasing policy. The old house, which buys the product of more oil wells than any company west of the Mississippi River, and which for years had been the largest purchaser of crude oil in the United States, announced that it would cut its runs in Oklahoma City by 12,000 bbls.; would withdraw from the Texas Panhandle as a buyer and would buy no oil for the present from the big Voshell Pool, the largest potential producing area in Kansas. Previous to that it had cut its runs in the North and Central Texas area and had announced that it would apply Oklahoma proration rules to all leases in Kansas producing an average of more than 5 bbls. per well per day. The company is a large producer of oil. It owns about 60,000,000 bbls. of stored crude oil and it can not find buyers for much of the crude it has been purchasing. It is said that the company stored about 1,250,000 bbls. in October and about 750,000 bbls. up to this writing in November. The presumption is the heads of the company have decided that their first consideration is to get rid of the company's own production and to lower rather than add to its crude stocks, as no purchasing company in the business desires to store a single barrel of oil at this time, with an ocean of oil in sight in California, Texas, New Mexico and Oklahoma.

Withdraws From Panhandle

The Prairie Oil & Gas Co. announced last Thursday that effective at 7 a. m. on Thursday, November 27, it would cease purchasing crude oil in the Texas Panhandle fields and would withdraw its posted prices for that district on the same day. The company gave as its reasons that the market outlet which has enabled it to purchase Panhandle crude oil has ceased to exist. The company will continue to restrict its own production in that district in harmony with proration plans.

The Prairie pipe line has been handling as high as 20,000 bbls. a day from Gray, Hutchinson, Potter and Carson Counties, Texas. Of late this has been cut down to 13,000 bbls. per day, of which about 4,500 bbls. was Prairie Oil & Gas Co.'s own production and the remainder, or about 8,500 bbls. a day, has been purchased oil. The action of the Prairie Oil & Gas Co. will affect a considerable number of operators as it has been taking oil from 79 companies and 129 leases in that general territory.

The Skelly Oil Co. and the Midwest Exploration Co. are the hardest hit by the action of the Prairie in withdrawing as a buyer in the Panhandle area. The Skelly Oil Co. supplied a large portion of the crude the Prairie pipe line has been taking, and second to it has been the Midwest company, and these companies must either find another purchaser, or ship the oil to their own refineries by tank car if they are not to shut their production in until a market appears.

The market outlet for Panhandle crude through the Prairie lines has been supplied largely by the Standard Oil Co. of New Jersey.

For several months the Prairie company and the Carter Oil Co. have been trading oil, the Panhandle crude being transported through the Prairie pipe lines to a junction with the Oklahoma pipe line. This arrangement has been terminated.

Cuts Oklahoma City Runs

The Prairie Oil & Gas Co., which has been producing and purchasing about 15,000 bbls. a day in the Oklahoma City Field, is now taking only 3,000 bbls. a day from that field because of the falling demand for oil. Prairie officials announced the company was forced to do this, or to store the oil, and that their storage is practically full. The Prairie will run about 700 bbls. of its own Oklahoma City production and purchase 2,300 bbls. from others.

The cut in runs in the Panhandle and the Oklahoma City areas aggregates about 20,500 bbls. a day for the Prairie Pipe Line Co., and the producers whose properties have been served are placed in a position where they must find other buyers or run their oil to their own storage or to shut in their wells.

Voshell Affected

Proration in the Voshell Pool in McPherson County, Kansas, is in danger. The pool has a potential production of 66,800 bbls. per day and it was agreed among the producers some time ago to keep actual production down to 3 per cent, which gave the field a theoretical outlet of about 2,000 bbls. per day. As a matter of fact it has been recently producing about 6,500 bbls. per day. The capacity of the pipe lines in the field is about 42,000 bbls. per day. The Prairie Pipe Line Co. has an 8-inch line with a capacity of 18,000 bbls. per day; Skelly Oil Co. a 6-inch line with a capacity of 12,000 bbls. per day; Shell Pipe Line Corp. a 6-inch line with a capacity of

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Program for Engineering Research

Advancement Has Been So Rapid There Is Need for Additional Fundamental Data. Recommendations of Committee

By L. G. E. Bignell
Petroleum Engineering Editor

It is not so many years ago that the technical man was unknown in the production branch of the petroleum industry, although chemists and technicians have long been engaged in the refineries and have contributed much to the development of that phase of the industry. The first technically trained men to be used in the production departments were geologists and their findings proved so valuable to the industry that the petroleum engineer was next employed and his importance has been growing steadily ever since.

About 10 years ago there were comparatively few petroleum engineers engaged by the oil companies and it will therefore seem rather strange to state that since that time the advancement made by these engineers has been so rapid that they now find themselves actually in need of additional fundamental data which at this time are not available to them from any source.

With the drilling of wells below 6,000-foot depths many new problems have been introduced into the science of petroleum engineering that will require complete new sets of data to permit of their solution. The ever-increasing pressures encountered at these great depths, together with higher temperatures, are found to make many changes in the character of the gas and oil, and laws of flow of these elements through porous media under comparatively low pressures must be revised to meet the requirements now being set up due to the deeper drilling.

A.P.I. Active

About five years ago John D. Rockefeller and the Universal Oil Products Co. financed a program in fundamental research and have contributed to it $100,000 per year. This program will end June 30, 1931, and while much has been accomplished it will be necessary to continue much of this work to consolidate the data secured and put into shape for practical application in many of the engineering problems of the industry.

Under date of September 12 the American Petroleum Institute issued a bulletin on this petroleum research program and outlined in it a brief statement of progress made on the various projects for the period July 1, 1929, to June 30, 1930; a complete list of papers published or approved for publication up to September 10, 1930, and a list of projects and personnel for the period July 1, 1930, to June 30, 1931.

A review of this bulletin shows that 41 projects have been undertaken ranging from geological problems dealing with occurrence and recovery of petroleum and the composition and properties of petroleum, on through many studies of actions of gases under various conditions and connecting these studies with production and refining problems.

The five-year program is briefly outlined as follows:

"1. Origin, which includes studies on (a) the conditions under which oil or oil-yielding material is today accumulating, (b) the factors controlling the formation of oil from the original plant and animal matter, (c) the influence of intense pressure, of temperature, and other factors on the generation of oil in the rocks; 2. Earth temperatures and their relations to the occurrence of petroleum; 3. Occurrence of oil in limestone; 4. Factors affecting the movement of oil, gas and water through rocks."

Under composition and properties of petroleum there has been considered: "1. Composition, including (a) hydrocarbons, (b) sulphur compounds, (c) nitrogen compounds; 2. Physical data; 3. Reactions of petroleum constituents."

Methods of Procedure

As most of these problems deal directly with fundamental research most of them have been assigned to universities and colleges where personnel and equipment were available to carry on the work. Some of the projects are being handled by departments of the Government, while one or two others are being directed by advisory committees composed of A.P.I. members and the actual work done by scientists employed for this special purpose.

Many of the projects have advanced to that stage where one or more reports have been prepared and published, such as Production Bulletin No. 205, issued by the American Petroleum Institute in October, and dealing with "Earth Temperatures in Oil Fields." This bulletin is divided into five parts and has an introductory chapter by K. C. Heald in which he outlines the study of earth temperatures in oil fields on anticlinal structure; this is followed by a description of apparatus by C. E. Van Orstrand, and parts 3, 4 and 5 report on the work done in Oklahoma, Texas and California, respectively, and gives such data as available for the various pools covered by the field work in these three states.

This is a very valuable contribution to the literature of geothermal gradients in oil fields and much detailed data on temperatures in fields in Oklahoma, Texas and California is given which should prove of assistance to the petroleum engineer and geologist in future work. The bulletin can be obtained from the American Petroleum Institute, 250 Park Avenue, New York City, for $1.50 per copy

Deposition of Oil

The November issue of the Bulletin of the American Association of Petroleum Geologists contains an article by Parker D. Trask, research associate, and C. C. Wu research fellow, both with the American Petroleum Institute, on "Does Petroleum Form in Sediments at Time of Deposition?"

This work is based upon the work of Mr. Trask and is abstracted as follows:

"Chemical analyses of large quantities of recent marine sediments from the richest areas located during a survey of the distribution of organic matter in various types of modern deposits indicate that liquid petroleum probably does not occur in sediments at the time of their deposition, and that if it is present, it is in very small amounts, certainly less than 3 parts per 100,000. Therefore, petroleum present in newly deposited sediments is not an important factor in the genesis of oil. Presence of small quantities of solid paraffins suggests that some constituents of petroleum occur in fresh sediments. Fatty and oily substances constitute less than 1 per cent of the organic content of marine sediments. Presumably much, if not most, of the petroleum comes from the remaining 99 per cent of the organic matter. Fatty acids ranging from cerotic ($C_{26}H_{52}O_2$) to melissic ($C_{30}H_{60}O_2$), comprise practically all the fatty acids observed and they constitute from 0.002 to 0.006 per cent of the sediment. Organic sulphur compounds form about 0.03 per cent of the deposits. Free sulphur is a common minor component of all the sediments, and ranges from 0.02 to 0.1 per cent in quantity."

Production Research Problems

The work that has been done under the fundamental research program has been largely related to geological and refinery problems and therefore has not developed data of particular value to the petroleum engineers. However, some of the work thus far done, such as the work of Dr. Robert A. Millikan of the California In-

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ADDRESS AND EXHIBITS FEATURE MEETING OF DRUMRIGHT CHAPTER

D. O. Barrett, of Tulsa, designing engineer for the Gypsy Oil Co., was the principal speaker at the November meeting of the Drumright chapter of the American Petroleum Institute held last week in the auditorium of the Drumright Community Hall, Drumright, Okla. Mr. Barrett discussed four-cycle engines, alignment of engine clutches and shafts and transmission. Lantern slides were used in connection with the talk.

Interest was added to the meeting by exhibits of oil field equipment provided by various manufacturers, including the Oil Country Specialties Manufacturing Co., Coffeyville, Kans.; Happy Belting Co., Tulsa; Clark Brothers Co., Olean N. Y.; Weber Engine Co., Kansas City, Mo.; Superior Engine Co., Springfield Ohio; Cooper-Bessemer Corp., Mount Vernon, Ohio; Titusville Iron Works Co., Titusville, Pa.; Wico Electric Co., Springfield, Mass.; Robert Bosch Magneto Co., Long Island City, N. Y.; and Marshall Supply Co., Tulsa.

D. R. Brown, president of the Oil Country Specialties Manufacturing Co., showed a chain-driven drilling machine and pumping unit. The Happy Belting Co. exhibit included a demonstration of methods of tightening endless belts on oil field machinery. Other exhibits were gas engines, a new type of magneto developed for hard starting and a new method of forging crankshafts.

There were 262 members of the chapter and their guests present at the meeting.

More than a score of Oklahoma cities, including Cushing, Oilton, Shamrock, Bristow, Tulsa, Seminole and Little River, besides Kansas City and Coffeyville, Kans., were represented. Several attending the gathering made the trip by airplane.

Following the address by Mr. Barrett, Charles Shuman, chairman of the Drumright chapter, appointed the following committee to nominate officers for the ensuing year: W. H. Bettis, of the Gypsy Oil Co.; W. H. Danforth, of the Deep Rock Oil & Refining Co.; and L. A. Cook, of the Shell Petroleum Corp.

The next meeting of the Drumright chapter will be held December 16. The election of officers will be held at that time.

Members of the Drumright chapter of the American Petroleum Institute and their guests at the November meeting. Some of the oil field equipment exhibits are shown in the foreground.

Aluminum Foil Used for Tank Roofing

Difficulties of Application, Including Locked Seam, Have Been Overcome. Important Step in Corrosion Work

By Harry F. Perkins
Vice President, Metalfoils, Inc.

At the A.P.I. convention December last, a very important step in combating corrosion was disclosed by Dr. Stanley Gill who described the application of aluminum foil to the decks of storage tanks. Aluminum has proved very resistant to the ravages of hydrogen sulphide, other sulphur compounds, and atmospheric attack. Technically pure aluminum is used in the manufacture of foil which is absolutely impervious to moisture and does many things that no other coating is capable of doing.

For many years, running into decades, studies have been made by many competent technicians of means for protecting metal by applying coatings of lead, tin, copper, zinc, nickel and most recent chromium and cadmium by dipping, plating and molten spraying. Chemical coatings of oxides, nitrides, phosphates and

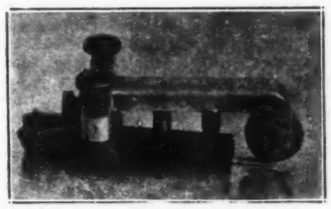


Figure 1—Meta-Curler for locking seams of Meta-Foil roof.

others have been tried. Paints of all descriptions have been used. The transitory nature of much of this protection is due to two main causes. First, the unsuitable conditions surrounding application, and secondly, the activity of moisture which infiltrates through these surfaces.

With aluminum foil the condition of the surface to which it is applied is not so important so long as it is firm. No moisture can get through the solid sheet of foil to continue the corrosion started before coating was applied or to renew the attack.

The fondest hopes in sheathing steel with aluminum foil were to circumvent periodic painting and to permanently arrest corrosion. This anticipation arose from the fact that extensive tests have shown aluminum to have an average penetration by corrosion of .0001 inch per

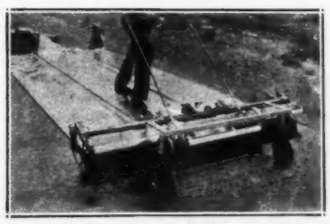


Figure 2—The multi-strip foil layer for flat surfaces; this can be adapted to tracks.

year in an industrial atmosphere. But surprise was felt at the unlooked for results of the initial applications which were made on oil tank roofs. Corrosion became a minor consideration when it was found that the aluminum foil caused a reduction in the temperature of a steel roof of some 25° F. and acquired evaporation savings thereby which amounted to the cost of applying foil in a short time, giving results comparable with expensive forms of insulation.

Improved Product

Subsequent tests have demonstrated that the highly polished foil now produced after months of effort by the Aluminum Co. of America is equivalent to 1 inch of good insulating material, is one-tenth the weight and at most half the cost. This comparison applies in the case where most of the heat is received by radiation as from the sun.

Early applications of foil were made at high speed to keep down the cost, and the foil was run of mill which besides being of dull surface carried many imperfections. Specifications were drafted by the author and the Aluminum Co. of America has overcome the difficulties in meeting these speficiations and now produces a foil that is within the thickness tolerance, has a brilliant finish and is reasonably free from imperfections.

After experimenting with various thicknesses of foils it was determined that thicknesses under .005 inch were not economical. Reasons for this deduction are as follows: The thinner foils are easily torn and easily punctured, they will not stand up under constant foot traffic, they are difficult to lay smoothly, the slight increased cost of the .005 inch foil over the .003 inch previously used is small compared with the total cost of installation and the increased life and service obtained, finally the finished job is more satisfactory in appearance with the .005 inch foil.

Laying the foil in the initial trial applications was done by pushing the coils over the roof lapping one strip over the other. Attempts were made to keep the overlap to 1 inch but this was found practically impossible, the seams were anything but straight, the foil was badly wrinkled and the job was unsightly. This condition did not interfere in the least with functions of the foil as a protector against corrosion and a reflector of heat, but besides the foil being too thin to re-

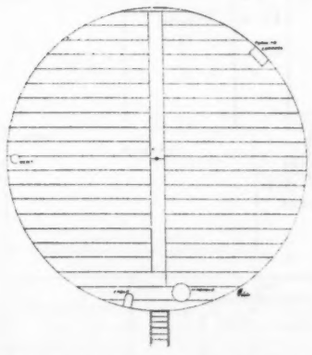


Figure 3—Layout of foil for cone roof to give the best and most economical results.

sist wear and to apply properly the laps could not be held down. Here was a difficulty not anticipated but easily explained. Dr. Stanley Gill again came to the rescue by adapting an old appliance to a new condition. Doctor Gill lays a narrow strip of foil in hot asphalt over the seams.

Suitable Adhesive

The vital need of a suitable adhesive when commercialization of foiling was taken up led to considerable intensive work, as the adhesive played a vital part in the success of applying foil. An article by the author in The Oil and Gas Journal, issue of May 1, explains some of the work this entailed. As in other cases of endeavor, the aid of these tests is necessary for the development of adhesives thus relieving the consumer or purchaser from becoming the tester.

Adhesives in common with other organic compounds will not withstand attack by the destructive atmospheric agents so, just as was to be expected, adhesives exposed at the edges of laps slowly disintegrated causing the foil to become loose. This will also happen to the asphalt applied hot. A further disadvantage of lapping the foil is that the seams cause each piece of foil to be insulated electrically creating a spark hazard.

Commercializing foil application required the surmounting of all the above objectionable features. This has been done and the publicly acclaimed impossible has again been accomplished in the form of the Meta-Foil Roof.

In early experiments the author produced a locked seam in experiments by hand with aluminum foil; it was thought that this could not be done in a practical manner but the locked seam is now a practical reality.

The locked seam for foiling assures moisture proofness, vapor tightness, weather proofness, spark proofness, mechanical continuity, straight seams and smoothly laid foil allowing full advantage to be taken of the full life of foil.

Many months have been devoted to the development of apparatus and methods

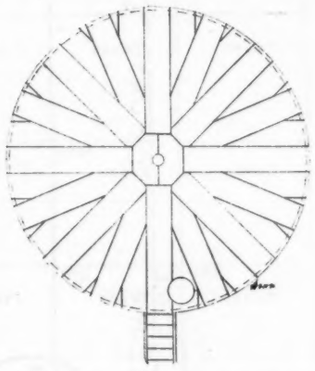


Figure 4—Layout of foil for umbrella roof where wastage is bound to be large. This pattern calls for the least amount of foil.

for laying foil in an improved manner to conform with commercial requirements and the results have been even better than was anticipated.

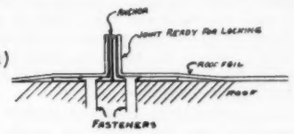
Machine Developed

After many trials and failures the machine illustrated in Figure 1 was developed for locking seams. This machine weighs but a few pounds, it can be carried in a large pocket and is capable of operating under very adverse conditions. Seams can be locked on a 10-foot radius, on concave or convex surfaces, over irregularities and with rough or wrinkled edges. Aluminum sheets up to .0085 inch thick can be handled by this machine and as many as five pieces of thinner foil can be locked together. While locked or crimped seams for metal are very old the type of seam used for foil has never to the author's knowledge been produced and no such apparatus for locking seams has been made before. The locking device can be operated as fast as a man can move.

The next problem was to lay the foil smoothly, straight and with the edges ready for locking. Figure 2 shows a machine for this purpose which lays three strips of foil from three coils at the same time and does it perfectly. For small roofs or irregular surfaces the single coil machine is used.

Compare the above method which is carried on by only six or seven men with the lap seam method where as many as 14 men were employed. Under the new method the foil is smooth and the seams even.

In the close study of this work other important developments have been made. It has been found that the work of laying foil can be accomplished much more effectively by starting with a center or diametrical key strip working from this strip to the eaves. Figure 3 is a flat or cone roof while 4 is an umbrella type roof. In the Meta-Foil roof means have been developed for protecting all raw edges such as occur at cutouts and at the eaves. The high electrical conductivity of aluminum has been taken advantage of to improve protection



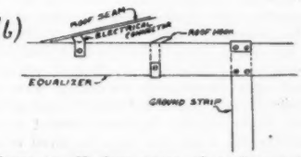


Figure 5a—Various types of anchors and various methods for applying them have been developed. The locking of seams makes this anchoring possible and convenient.

Figure 5b—This sketch shows how thoroughly electrical charges are taken care of and sparks are prevented.

against lightning instead of making it a hazard as in former installations by assuring electrical contact between the foil and the steel of tank or the ground at numerous places as shown in Figure 5-b. Another improvement made possible by the locked seam is the anchoring of the foil at convenient points as shown in Figure 5-a, in fact, the whole length of every seam may be mechanically tied to the roof if desired. Anchoring is required where there may be danger of creeping or where adhesive cannot be used. Patching of torn places can be accomplished by locking in a piece of foil maintaining the uninterrupted metallic sheet.

Aluminum foil receives its high brilliancy surface from rolling, there is no grinding or buffing. In manufacturing as the foil leaves the rolls it is very hard

Figure 6—This pictures the electrical connection between the foil of roof and the equalizing band around tank which in this case was an aluminum angle.

and has a tensile strength between 82 and 112 pounds per inch of width for .005 inch foil. In this condition it is not suitable for most purposes as it is stiff and springy and has a faculty for cracking when and where least expected although it can be lock-seamed without trouble.

After annealing the pure aluminum foil is dead soft, much like lead, and loses about 40 per cent of its tensile strength. Cold working of the foil hardens it again and this is what causes part of the trouble with lapped seams, as in turning up the foil to apply adhesive and in pressing down the edges there is suf-

(Continued on Page 62)

Aspects of Hydrogenation in Refining

Greater the Flexibility the Greater the Possibility for Decreased Costs Through Increased Capacity

By R. T. Haslam* and R. P. Russell†

For the present economical application of the process the units should be of sufficient capacity to take advantage of the low cost of operation resulting from increased throughput. For example, in a plant for hydrogenating about 5,000 bbls. per day, the compressed and purified hydrogen costs about 15 per cent less than in a plant of half this capacity; while for a 10,000-bbl. per day plant the cost of this item is still further reduced by an additional 12 per cent. It is evident that the hydrogenation plant should be large enough to permit taking advantage of such savings; and that, even in what might today be considered a plant of considerable size, there is still opportunity for greatly decreased costs through larger scale operations.

It is also clear that the greater the flexibility and the larger the number of applications of the process, the greater the possibility for decreased costs through increased capacity, and also the less the obsolescence factor because the greater the probability that the plant would continue for a long period to be an efficient means of controlling quality of products and over-all refinery operating costs, irrespective of changing market and changing crude supply. A large amount of experimental work has been required to explore the more important refining fields to develop the various major uses of the process commercially.

This paper reviews certain data regarding these applications of hydrogenation[1], with particular reference to the adaptability of the process and the way in which the individual applications may fit into various refinery situations. Since the individual applications of the process not only attain some primary refinery end in each case, but also simultaneously effect secondary improvements in quality and yield unusual with prior refining methods, considerable emphasis is laid on the dual nature of each.

Description of the Process

As has been mentioned in a prior publication, each of the major adaptations of hydrogenation in oil refining may be carried out in the same equipment, the results being controlled by suitable alternation in operating conditions. The charging stock and hydrogen react in the presence of a catalyst at the desired temperature and at about 3,000 pounds per square inch pressure.

The hydrogen may be produced by any one of several processes; but, in general, in refineries where large amounts of refinery or natural gas are available, it can be made readily from these hydrocarbon gases and steam according to the reaction:

$$CH_4 + H_2O = CO + 2H_2$$
$$CO + H_2O = CO_2 + H_2$$

The carbon dioxide in the final gas mixture is then scrubbed out and the relatively pure gas used for the hydrogenation reaction.

The feed oil and compressed hydrogen together are passed through heat exchangers and a fired coil into reaction vessels containing the catalyst. The treated product, together with any unconsumed gas, passes out through the heat exchangers into a cooler and thence into a separator where the liquid product is separated from the unconsumed gas. The liquid product is sent into run-down pans and the unconsumed gas may be reused directly or, under most conditions, may be scrubbed at full pressure to remove the hydrogen sulphide formed from the sulphur present in the feed stock. The resulting scrubbed gas is raised again to full operating pressure in special compressors.

The catalysts employed are unusually rugged, and for this reason the process is virtually continuous. Runs of as long as eight months' duration have been made in full-scale operations without apparent decrease in catalyst activity.

Major Adaptations of Hydrogenation

Five adaptations of hydrogenation of immediate importance to the oil refining industry have been pointed out in a previous paper.[2] These are:

1. The conversion of heavy, high sulphur, asphaltic crude oils and refinery residues into gasoline and distillates low in sulphur and free from asphalt, without concurrent formation of coke.
2. The alteration of low-grade lubricating distillates, to obtain high yields of lubricating oils of premium quality as to temperature-viscosity relationship, Conradson carbon, flash and gravity.
3. The conversion of off-color, inferior burning oil distillates or light gas oils into high gravity, low sulphur, water white burning oils of excellent burning characteristics, with gasoline being the only other product except for a slight gas formation.
4. The desulphurization and color and gum stabilization of high sulphur, badly gumming cracked naphthas.
5. The conversion of paraffinic gas oils into low sulphur, gum and color stable, good antiknock gasolines without the production of coke or tar.

The various processes mentioned are further summarized in Table 1.

These various applications of hydrogenation, together with a brief discussion of their possible utilization under various refining conditions, are discussed in the subsequent paragraphs.

Conversion of Refinery Residues Into Gaso'ine and Gas Oil

By the present methods of cracking, part of the charge stock is upgraded into light naphtha of greater value than the charging stock, while the remainder is degraded into gas, coke and heavy fuel oil, all of lesser value than the feed stock In contradistinction, hydrogenation may upgrade up to 100 per cent of the charging stock into lighter and lower boiling point products.

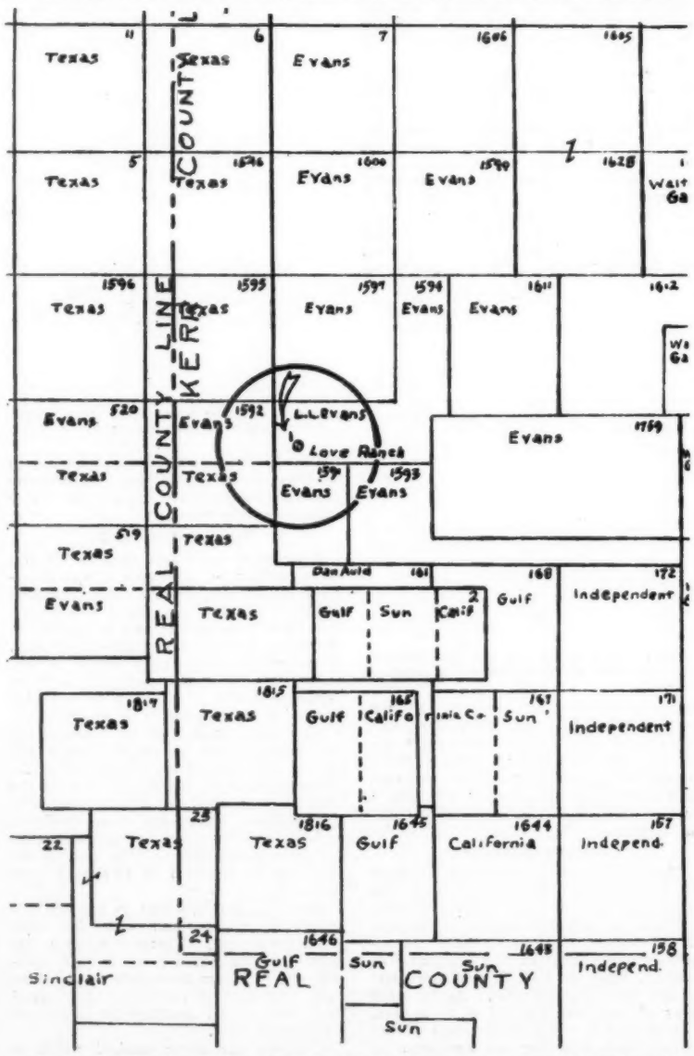
For the hydrogenation of heavy asphaltic crudes or residues from crude oils or from cracking processes, two types of operation may be used. The first of these takes place mainly in the liquid phase and serves to convert the heavy charging stock into 100 per cent or more by volume of distillate product, 90 per cent of which boils under 700° F. The gasoline content may represent from 5 to upwards of 35 per cent of the product. If a higher yield of gasoline is desired, the gas oil fractions may be recycled in the same unit, or further hydrogenated to gasoline in the vapor phase in a separate unit, or cracked. If the hydrogenated gas oil is cracked, the resultant tar may be hydrogenated if desired.

In the conversion of such heavy crude residues or cracking plant tars, all the asphalt present in the feed stock is converted into materials more paraffinic in nature and of lower boiling point, thus lifting a material of fuel oil value partly into the gasoline and the remainder into the gas oil or Diesel oil range. The gasoline formed is very low in sulphur, and finishes easily to meet specifications. The gas oil or Diesel oil, even though it may have been formed from a charging stock very high in sulphur, may be cracked to give a gasoline low in sulphur; or it may be converted as just mentioned into gasoline of desirable antiknock quality by subsequent hydrogenation in the vapor phase.

In connection with this application of the process, it is interesting to note the present price position of fuel oil in comparison with coal. Thus, for example, in New York fuel oil is selling for about the same price per 1,000,000 B.t.u. as run-of-mine bituminous coal. The fact that fuel oil, which unquestionably is superior to coal from the standpoint of the user, should sell over a long period for below its competitive value is proof of the inability of the oil industry to control its output of this product. This discrepancy between the true economic or competitive value of fuel oil and its present selling price is, of course, due not only to the low price of crude but also to the necessity for producing fixed quantities of heavy natural residues and cracked tars (or the alternative, coke and gas) under the existing conditions of crude supply and refinery technique. Hydrogenation, therefore, offers a method of taking this by-product fuel oil off the market so that the selling price of the whole production may rise to a natural level.

The use of hydrogenation to convert heavy residuals into gasoline and gas oil must, therefore, be considered from viewpoints other than from the immediate value of the gasoline and gas oil produced. Not only are finishing operations on the refineries' products reduced because of the low sulphur content and the

SOUTHWEST TEXAS WILDCAT ATTRACTS ATTENTION



Map showing location of L. L. Evans and Walter Gant's No. 1 Love, in Section 1,594, J. Martinez Survey, southwestern Kerr County, Texas. It topped 2½ feet of oil sand three weeks ago at 2,552 feet making a good showing of oil which was drilled through, and this week it startled its owners and interested parties when it struck a gas sand at 3,375 feet, ignited and burned the rig. The wreckage is now being cleared away for another derrick which is being moved in, also for a 1,000-bbl. storage tank and a 200-bbl. flow tank for several flows of oil were reported. Many believe that it will make a good producer although little can be told of it now. The Texas Company, Gulf Production Co. and L. L. Evans are the largest holders of acreage around the well.

*Standard Oil Development Co., New York.
†Hydro Engineering & Chemical Co., Elizabeth, N. J. Presented at eleventh annual meeting, American Petroleum Institute, at Chicago, Ill., November 13, 1930.

[1]Discussed previously from the somewhat different viewpoint in Ind. Eng. Chem., 22, 1,030 (1930); World Petroleum, 1, 423 (1930); Nat. Petroleum News, 22, No. 40, Page 58 (1930); and The Oil and Gas Journal, 29, No. 20, Page 218 (1930).

[2]Op. cit.

stability of the hydrogenated products, but also production of by-product fuel becomes controllable.

Improvement of Low Quality Lubricating Distillates

The modern motor lubricating oil, to give good service, should among other properties have: (1) The minimum change in viscosity with a change in temperature; (2) a high flashpoint; and, (3) a low Conradson carbon. With present refining methods it has not been economically possible to combine these properties to the extent desirable in a single oil, even from the best crudes available. In general, by hydrogenation, paraffinic lubricating oils, with a relatively flat temperature-viscosity curve characterized by unusually high flash points and low Conradson carbon, have been produced from lubricating distillates from Mid-Continent, West Texas, Colombian and other crudes.

Under the best conditions for this type of hydrogenation, there are produced from 100 bbls. of lubricating distillates 103 to 104 bbls. of hydrogenated product containing from 60 to 85 bbls. of lubricating oil, somewhat lower in viscosity but much more paraffinic than the charge, together with about 5 to 10 bbls. of gasoline and from 10 to 30 bbls. of gas oil. From 80 to 90 per cent of the sulphur in the feed stock is eliminated during hydrogenation. Table 2 contains characteristic inspection data of heavy and extra heavy motor oils made by hydrogenating Mid-Continent lubricating distillates.

The result obtained by the hydrogenation of lubricating oil distillates is, however, not solely to improve the temperature-viscosity relationship, the flashpoint of the finished lubricating oil, nor the Conradson carbon; since, in addition to these results, the color is improved to a very large degree. For example, in this phase of the process, the Conradson carbon reduction has ranged from 70 to 95 per cent, and the color has been raised from one-fourth Robinson or below to from 10 to 15 Robinson. In other words, the use of acid and clay filtration for purposes of improving Conradson carbon and color is either eliminated or very greatly reduced when hydrogenation is employed for lubricating oil improvement. Moreover, hydrogenation permits a refiner to market paraffinic motor oils without the burden of disposing of paraffinic gasoline and of cracking a paraffinic gas oil to make gasoline of only fair antiknock qualities.

TABLE 2—INSPECTION DATA ON HYDROGENATED LUBRICATING OILS FROM MID-CONTINENT STOCK

	1	2	3
A.P.I. gravity	29.7	29.8	29.0
Viscosity at 100° F.	286	440	706
Viscosity at 210° F.	52.7	62.0	75.8
Viscosity index*	107	109	101
Flashpoint, °F.	440	490	510
Color (Robinson)	17	15	10½
Conradson carbon (%)	0.006	0.010	0.067

*The term "viscosity index" used in this table was devised by Dean and Davis, Chem. Met. Eng. 36, 618 (1929), and indicates the viscosity-temperature characteristics of the lubricating oil. For example, paraffinic oils such as Pennsylvania have a viscosity index of about 100, and Coastal oils a viscosity index of from 0 to 20.

Production of High-Grade Kerosenes

High-sulphur, low gravity, off-color kerosene distillates and poor quality, light gas oils may be hydrogenated to produce high yields of water white distillates and burning oils of high quality. In general these products meet specifications as to sulphur, color and smoke tendency, with no other treatment than reduction to flash and viscosity plus, in some instances, a slight doctor treatment.

Liquid yields are from 100 to 105 per cent by volume, and the product from 65 to 83 per cent of high-grade burning oil, the remainder being a gasoline.

A survey of a number of feed stocks has shown that burning oils at least equal to those obtained from the best straight-run Mid-Continent or Pennsylvania distillates can be obtained from such stocks as California, Coastal, heavy distillates from cracked Mid-Continent gas oils, and a number of others.

In this operation, as well as in the two discussed previously, much more is accomplished than would be gathered from a comparison of the burning characteristics of the feed stock and hydrogenated product. For example, in a recent large-scale operation for this purpose over 98 per cent of the sulphur in the feed stock was eliminated, the total product (about 105 per cent of the charge) was +30 Saybolt color, and reduction to flash by fire and steam distillation was sufficient to give a bottoms burning oil which needed only a doctor sweetening to be a product of exceptional quality. Furthermore, the gasoline taken overhead during this fire and steam distillation was practically sulphur and gum-free and was proven highly resistant to gum formation in storage. Although a by-product from the production of a very paraffinic kerosene, the gasoline was of an antiknock quality equal to finished gasoline from cracked Mid-Continent gas oil. The operation not only resulted in an improvement in burning quality, but also treating and the need for treating equipment were practically eliminated, and the gasoline produced made a specially valuable naphtha for use as a blending agent to take care of other naphthas having sulphur contents difficult to treat to below specification limits.

Finishing of Naphthas

By a mild hydrogenation, a high-sulphur, high-gum and unstable gasoline may be rendered stable, with about 50 per cent of the sulphur eliminated under such conditions of operation that the antiknock value is lowered only to about the same extent as would result from a slight chemical treatment. This phase of the process would be carried out in such a way that no appreciable change would be made in the boiling range of the naphtha.

On the other hand, where desired, hydrogenation may be carried out not only to eliminate sulphur almost entirely from a high sulphur cracked or natural naphtha, but also to give a marked improvement in knocking tendency and at the same time increase very largely the lower boiling fractions. It is possible to take a poor quality heavy naphtha or a blend of heavy naphtha and light gas oil and hydrogenate to obtain a product of superior distillation range and far better knocking characteristics than finished gasoline from the original naphtha distillate. Thus it is possible not only to avoid the high losses and unsatisfactory results of acid treatment; but, if desired, such an improvement in distillation range may be brought as to lower markedly or to eliminate the need for casinghead gasoline as a blending agent. This type of hydrogenation, therefore, not only accomplishes the equivalent of acid treating without treating losses, but improves the antiknock quality, and in effect replaces the casinghead additions. How each one of these various results influences the over-all operation of a refinery obviously depends upon local conditions, but the part played by each must be considered.

Production of Stable Antiknock Gasolines

In converting a fuel oil into gasoline and gas oil, or in upgrading a lubricating oil or refined oil distillate, hydrogen is added to materials naturally deficient in this respect. In other words, hydrogenation saturates the molecule of liquid at Baton Rouge, using a Mid-Continent gas oil as charging the operating conditions, but still utilizing the same equipment, the process may be reversed to yield stable, nonparaffinic naphthas from paraffinic or mixed base gas oils. For example, during a run on the hydrogenation pilot plant at Baton Rouge, using a Mid-Continent gas oil as charging stock, the first product made was a paraffinic burning oil of high gravity (e.g., 46.7° A.P.I.); without stopping operation, and merely by changing the conditions, the same charging stock yielded over 90 per cent of a stable, low-sulphur gasoline having the same knocking tendency as 80 per cent of iso-octane in n-heptane.

It will be recalled that in those adaptations of hydrogenation described earlier, the volumetric yield is 100 per cent or more. This is not always the case in producing antiknock gasoline from gas oil. Unless the knocking tendency and the fill is immaterial, the yield of gasoline is somewhat less than 100 per cent, although usually better than 85 per cent. In making antiknock gasoline by hydrogenation, however, no tar or coke is formed and only two products are obtained—gasoline and gas. Any material not converted into gasoline in the first pass through the system is recycled. The gasolines produced thus far have been practically

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TABLE 1—SUMMARY OF APPLICATIONS OF HYDROGENATION IN OIL REFINING

Process	Charging stock—	Primary result—	Approximate volumetric yield of Gasoline (%)	Approximate volumetric yield of Burning oil (%)	Approximate volumetric yield of Gas oil (%)	Approximate volumetric yield of Lubricating oil (%)	Total volumetric yield (%)	Sulphur in charge removed in process (%)	Gas formation (% by weight)
1.	High sulphur, asphaltic heavy residue	Asphalt and sulphur elimination with simultaneous conversion of entire charge into distillate	30		71	..	101	65–85	2–3
2.	Low-grade lubricating distillate	Production of premium lubricating oil particularly as regards temperature-viscosity relationship, flash, carbon and gravity	10		29	65	104	80–95	0.5–1.5
3.	Low-grade burning oil distillate	Production of low-sulphur premium grade burning oil	30	73	..	..	103	80–95	0.5–2
4.	Cracked naphtha	Desulphurization and gum stabilization without the deterioration in yield and knock rating characteristic of acid treating	100		..	..	100	50–95	0.5
5.	Paraffinic gas oil	Production of low-sulphur, low-gum, good antiknock gasoline	70–100	..	.	..	70–100	80–95	5–35

"Need Higher Crude Prices"--Godber

Can But Result in Improved Conditions Generally. Gasoline Is Too Cheap at Expense of Producer

By F. Godber
Director Royal Dutch-Shell

A good deal has been said recently about the difficulties of the oil industry and it becomes apparent that a great many of those interested are throwing up their hands in despair as a result of their belief that the ills of the industry are almost too serious to cure. Ills exist in abundance but undoubtedly a remedy can be found and is available if the industry would only meet its problems along broad lines.

Recently we have witnessed a collapse of the price structure of the domestic markets east of the Rockies, the abandonment of export prices and anything which would assist producers, upon whose shoulders the industry really rests, in securing a proper return for their energies in exploring for new fields and developing those already discovered. So far producers have borne their full share of the sacrifices necessary to rationalize the industry, and it is unfortunate that circumstances have so developed that their reward for these sacrifices has been reduced returns for such crude as they are able to produce. It would seem that a higher scale of prices for crude oil can but result in improved conditions generally. The industry is fraught with difficulties because of uncertainty caused by frequent and wide fluctuations in the price structure. No industry can progress unless the price of the commodity which it produces is stabilized along reasonably steady lines and it is only fair that the producer, who after all takes the widest chances, should receive at all times a reasonable return for his production and investment. There is no reason to believe that the producers in future are likely to be less broadminded than in the past and it is quite certain that a stabilized price for crude oil could be put into effect and maintained.

Operating at a Loss

Today both producers, refiners and marketers are operating at a loss and no great industry can continue long upon this basis. The law of supply and demand might be allowed to function and conservation abandoned, but in order to do so one of the greatest industries in this country and in the world would be completely wrecked. For this reason one must favor an increase in crude oil prices, believing that so long as crude is produced only within the limits of the demand, and the producers have indicated their willingness to keep their operations within these limits, that there is every reason why crude prices should be improved and the producer allowed to earn a fair return on his investment. If the producers are not allowed to do so, many of them are bound to fail and the great refining and marketing industries which are relying upon the producers for their supplies, will undoubtedly fail also. Gasoline is too cheap and it is grossly unfair that marketers should be in a position to sell gasoline to the public at present levels and really entirely at the expense of the producer.

Apparently for some reason or other the industry cannot or will not find common ground upon which to tackle their problem. One has one solution and another another, when really the solution is clear. Crude prices were cut recently because some producers could not find an outlet for their production and were selling it substantially below the then posted price. By so doing they did not increase the demand for crude products but caused larger quantities to be put into storage, thus increasing the danger from large inventories. Proration, therefore, is not operating to its logical limits. There is still an enormous quantity of gas wasted and more crude is being produced than the market can possibly absorb. If the wastage of gas were eliminated, it would automatically reduce the production of crude by tens of thousands of barrels a day and bring it nearer to the real limit of demand. It seems, therefore, that a proper figure should be found as representing the total demand in the country and the industry should be told clearly to what this figure amounts.

Producers Reasonable

Producers have on the whole not been unreasonable and have only to be told what quantities the country can absorb to bring their operations into line. With crude production fixed at the real figure of demand and not at today's artificial figures, the buyers of crude would then

(Continued on Page 130)

Conveyor Simplifies Handling of Coke

Power Operated Unit at Parco Refinery of Producers & Refiners Corp. Handles Output of Six Reaction Chambers

By C. O. Willson

The Producers & Refiners Corp. at its Parco, Wyo., refinery during the past three years has had a power operated conveyor for handling the coke output of six cracking stills. The conveyor had aided materially in lowering clean-out labor costs in the cracking operation with a small expenditure for maintenance.

Due to an unfavorable fuel oil market situation, the Producers & Refiners Corp. ever since the refinery was built several years ago has operated its Dubbs cracking stills on a nonresiduum basis. With a coke output capacity of 150 tons daily the quick handling of the coke from the reaction chambers is an important factor in the efficient operation of the entire battery. Various methods were tried out, finally resulting in the design of the conveyor system now in use.

The conveyor, the main features of which are shown in the accompanying sketch, is operated in a concrete tunnel 202 feet long, 7 feet wide and 6 feet deep. This tunnel is located beneath the concrete supports on which the six reaction chambers are located. The openings in the base of the reaction chambers are about 3 feet from the tunnel which is covered with steel plates.

The endless conveyor is the steel apron type supported by structural steel in the tunnel. At one end, the horizontal conveyor connects to an incline conveyor which empties into coke hopper. Both the horizontal and incline conveyors are 36 inches wide and of solid construction so that it can handle powdered as well as lump coke.

The conveyor is operated while a reaction chamber is being cleaned. The coke is removed from the 10'x40' reaction chambers which have a capacity of 75 tons each by means of a cable with hoist, the cable being inserted in the chamber before the cracking operation starts.

A 25 horsepower steam engine, which is housed underneath the incline, furnishes the power for the operation. The engine, by means of headshaft, is connected to the incline conveyor which in turn is connected to the horizontal conveyor as shown in sketch.

One man is in charge of engine and conveyor operation. A constant speed for the conveyor is maintained, the coke removal being controlled so as to prevent an overload for the conveyor. As the coke is removed from the reaction chamber, it drops to the conveyor through a 30"x30" opening. This opening is secured through the removal of the steel plates at the top of the tunnel.

Section of steel apron conveyor.

In order that coke will fall into the tunnel at the sides of the conveyor, steel aprons extend down from the sides of the opening. This apron arrangement is shown in the accompanying sketch giving an end view of the conveyor. Thus, all the coke including the powdered material drops directly on the conveyor. An average time of 1 hour and 20 minutes is required to empty a 75-ton chamber.

The coke at the top of the incline is dumped into a hopper which has a capacity of 100 tons. As it dumps into the hopper, the coke is sprayed with water and this spray is allowed to continue two hours after the dump is completed. This assures that the coke will not burn after it reaches storage. From the hopper, the coke is finally dumped into industrial railroad cars and taken to storage.

In conveyor systems of this type, trouble is often experienced through inability to properly lubricate the different parts of the conveyor, particularly the pulleys which extend the entire length of the conveyor. At the Producers &

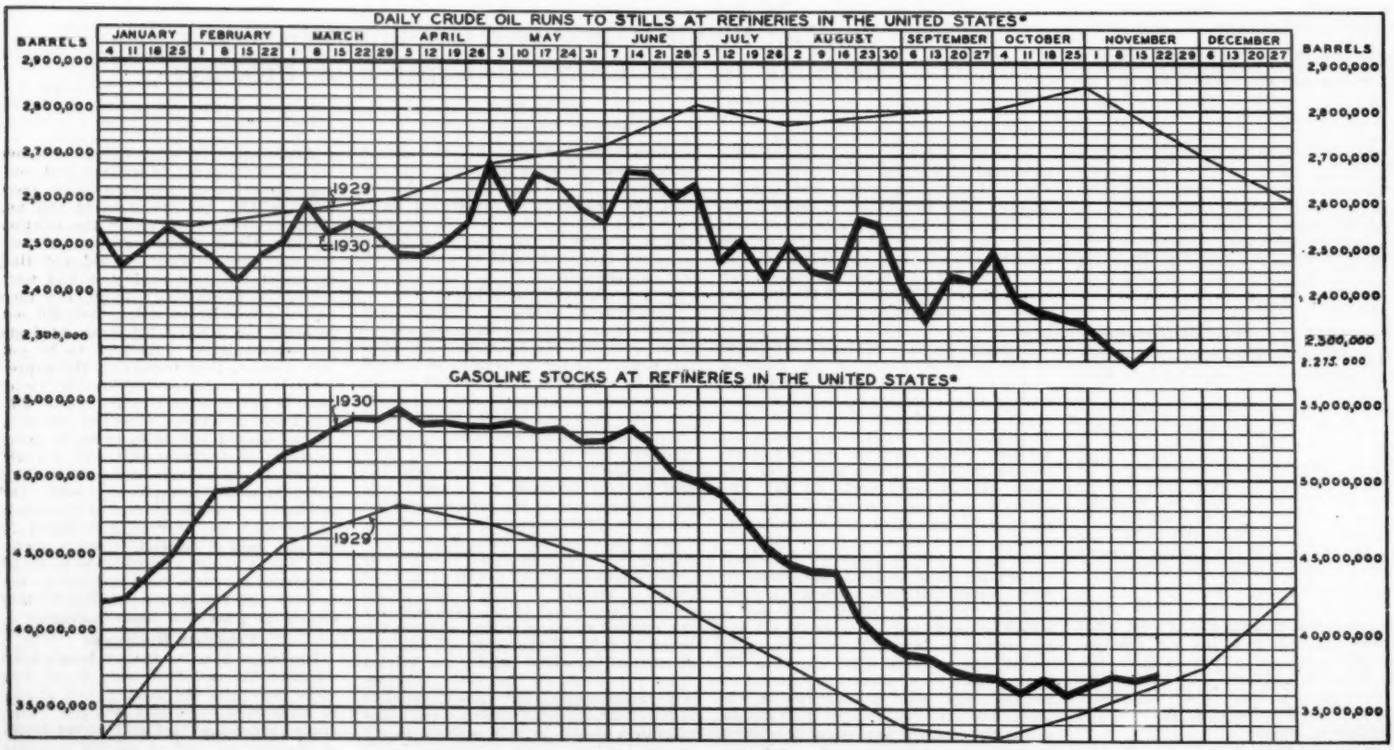
(Continued on Page 104)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

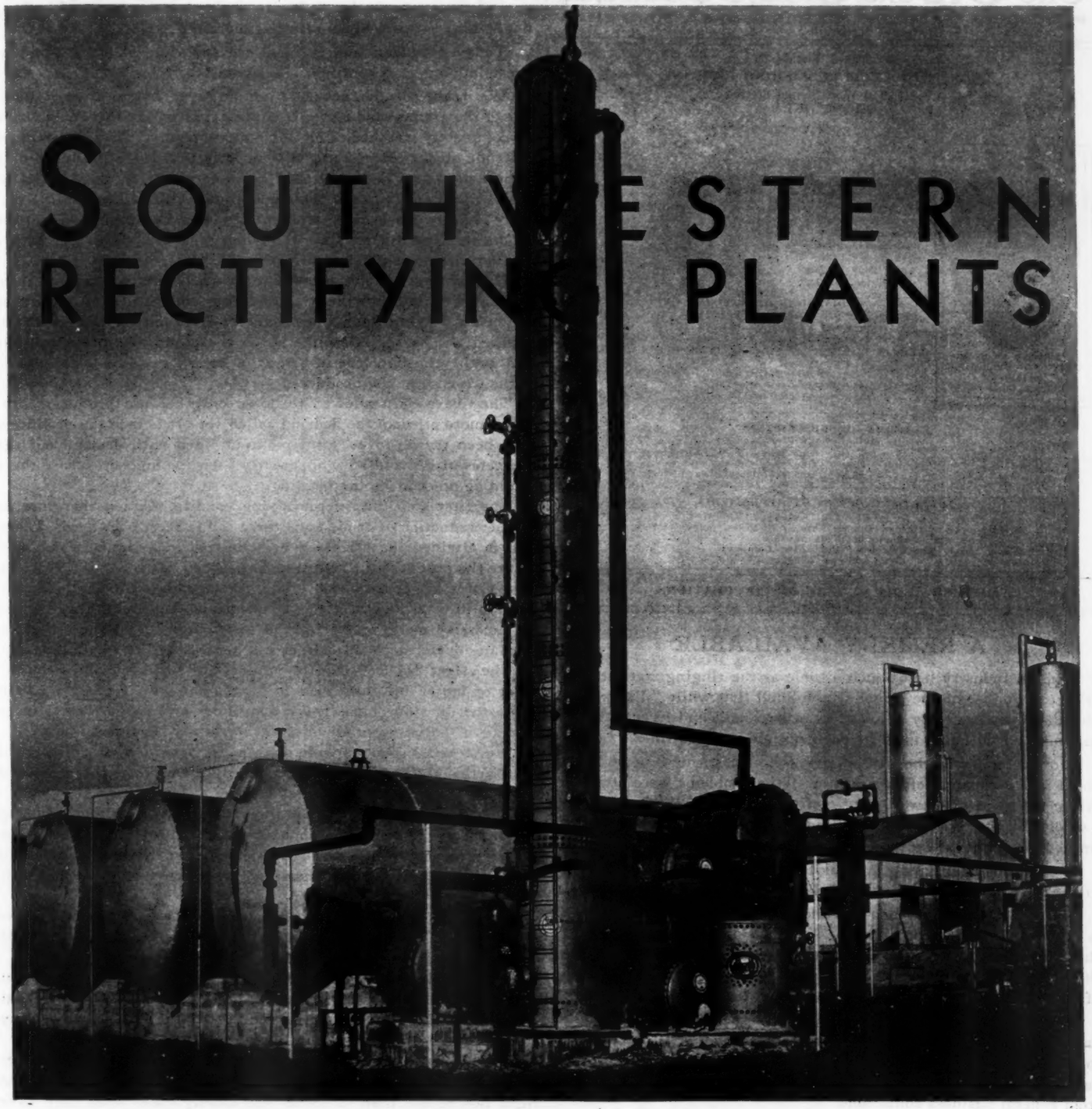
The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending November 22.

	Week Ending November 22				Week Ending November 15				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	429,400	5,343,000	11,566,000	100.0	461,400	5,643,000	11,936,000	100.0	454,857	5,998,000	7,431,000
Appalachian	93.8	71,300	766,000	1,029,000	93.2	68,600	802,000	1,016,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	97.5	257,600	4,270,000	3,914,000	97.5	254,700	4,349,000	3,858,000	98.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.4	258,100	2,108,000	4,603,000	89.4	265,400	2,187,000	4,615,000	87.7	263,428	3,604,000	3,277,000
Texas	91.9	527,400	6,393,000	10,730,000	91.9	514,600	6,752,000	10,772,000	90.7	539,857	6,590,000	13,757,000
Louisiana and Arkansas	98.3	148,100	1,253,000	2,138,000	98.3	164,000	1,207,000	2,054,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93.1	45,300	1,509,000	1,017,000	93.1	46,000	1,472,000	1,014,000	93.3	41,614	2,273,000	973,000
California	98.8	553,600	14,890,000	104,257,000	98.8	518,000	14,851,000	104,534,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.7	2,290,800	36,532,000	139,254,000	95.7	2,292,700	37,263,000	139,799,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	406,700	5,149,000	8,000,000	100.0	386,700	5,539,000	8,006,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	101,900	986,000	1,173,000	100.0	103,400	973,000	1,109,000	100.0	108,514	1,877,000	3,818,000

(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.



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The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle.

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A REMEDY AVAILABLE

The oil industry needs such a tonic as the ringing statement of Director Godber of the Royal Dutch-Shell that while "ills exist in abundance undoubtedly a remedy can be found and is available if the industry will only meet its problems along broad lines."

More specifically he said better conditions could be brought about in a comparatively short time if the problems were attacked "from the point of view of the benefits accruing to the industry as a whole and therefore to each individually instead of from a strictly limited viewpoint of individual and personal gain."

It would be humiliating to think the industry as helpless as some of the pessimists would have us believe.

In the first place the idea that the depression in the oil business is just a part of the general business depression we have been going through is all wrong. The oil industry has had depressions from the same cause when the rest of the country was enjoying the height of "Coolidge prosperity."

The effect of the general depression has been to reduce the normal increase in consumption of petroleum products but not enough to account for any vital reversal of trade currents if the oil industry had not been in bad shape from causes within itself entirely removed from general business conditions.

These causes were overproduction of crude, overproduction of products and an uneconomic margin between production costs and marketing.

Primarily, of course, these originated in the overproduction of crude which gave the manufacturers too cheap raw material and led to overproduction of gasoline which in turn led to wide margins in the effort to dispose of distress stocks.

These wide margins invited "Tom, Dick and Harry" into the oil marketing business with returns so large that they could afford to cut retail prices by giving the consumer part of the margin and still have enough left to be profitable.

The result has been the conditions we see today, in the words of Mr. Godber, "a collapse of the price structure of the domestic markets, the abandonment of export prices and anything else which would assist the producers, upon whose shoulders the industry really rests, in securing a proper return for their energies in exploring for oil fields and developing those already discovered."

His conclusion is that "a higher scale of prices for crude oil can but result in improved conditions generally."

Today producers and refiners are operating at a loss "and no great industry can continue long upon that basis."

We might abandon conservation, he says, "but in order to do so one of the greatest industries in this country and in the world would be completely wrecked. For this reason one must favor an increase in crude oil prices believing that so long as crude is produced only within the limits of the demand, and the producers have indicated their willingness to keep their operations within these limits, that there is every reason why crude prices should be improved and the producer who after all takes the widest chances, allowed to earn a fair return on his investment."

If producers are not allowed to do so, he warns, many of them are bound to fail and the great refining and marketing industries which are relying upon the producers for their supplies will undoubtedly fail also. "Gasoline is too cheap and it is grossly unfair that marketers should be in a position to sell gasoline to the public at the expense of the producer."

They have been allowed to do so only because producers produced more oil than the demand called for. It is true the producers have been trying to keep their output lined with demand but the estimates of demand have apparently been too high otherwise there would be no crude going begging.

The first step toward remedying conditions must therefore be further reduction of crude until there is no excess over needs. When that is attained the price can be stabilized at a figure which will assure the producer the return he has earned. The manufacturer, no longer able to get too cheap crude, will be obliged to limit his production to what he can sell at a reasonable return and he will have no excessive margin to offer the distributor that can be used in breaking down the retail market and depressing the whole industry.

The effect has been that the producer of crude and the manufacturer of motor fuel have had to be content with 5 cents a gallon while the distributor has had a margin of 7 cents or 2 cents more than both the crude producer and the refiner together.

Worst of all that too-wide margin has been used to force down still further the small return obtained by the producer of crude and the manufacturer of motor fuel.

It has attracted irresponsible competition intent only on securing the profit of the moment without any concern for the future of the industry. With 7 cents a gallon to gamble on they felt they could undersell legitimate oil companies 2 or 3 cents or more and still make a "good thing" out of it.

When it is recalled that there have been periods when the margin was but 4 cents and even 2 cents a gallon for distribution the abnormal swing can better be measured.

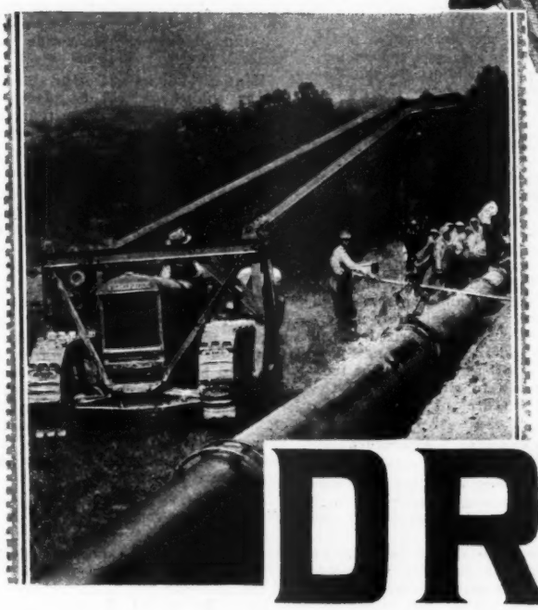
Seeing and actually experiencing the evil effects in the present condition of the industry it may be thought, with Mr. Godber, that "a remedy can be found and is available if the industry will only meet its problems along broad lines."

The uneconomic absurdity of the man who finds and produces the oil and the man who manufacturers it into gasoline getting so much less return than someone who merely takes what they have produced and passes it on to the consumer at the filling station must be considered in all its ramifications, not least of which is the use of the too excessive margin to break down the whole structure of the industry.

There are too many filling stations, too many and too elaborate, and all this investment is at the mercy of any one who can fill a few pumps from a railroad siding and gamble on that 7 cents margin at the expense of every legitimate interest in the industry.

The producer getting his crude cut and the refiner selling his products on a falling market are paying the price of overproduction to the "hole-in-the-wall" operator who is taking advantage of the oil industry's failure to put its house in order.

Crude is too cheap at the well and gasoline too cheap at the refinery because of conditions in the industry which can be corrected if attacked along broad lines.



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Electrical Corona Discharge Employed

Its Use as an Accelerator in the Vapor-Phase Cracking Operation Is Developed After 14 Years of Study and Experiment

By Herbert R. Rowland
Chief Engineer Moody Engineering Co., Inc.; Technical Director C and C Developing Co.

For some 14 years the C and C Developing Co. has been engaged in the development of a vapor phase cracking operation using the electrical corona discharge as an accelerator of the cracking operation.

The company devoted its early work along the lines of certain patents issued to Louis Bond Cherry forming the corona discharge by means of high frequency, high voltage electrical circuits. Unfortunately the electrical circuit connections were such, that should a lead-in insulator be punctured or a wire break, there would be no index to the operator of the lack of functioning of the electrical circuit. Another disadvantage was, that due to the low efficiencies of the apparatus necessary to develop this high frequency corona discharge, less than one-half of 1 per cent of the power taken in on the primary side of the step-up transformer was used as useful work in the reaction tubes. Furthermore, the complication of the electrical circuits was a bar to the use of this system in a refinery where electrical circuits should be simple in order that the operating forces of the refinery could understand them.

After about six years of experimental work the company called on the services of the Moody Engineering Co., Inc., of New York, and the writer was put in charge of carrying on the work to commercial feasibility.

A study was made of the company's experimental plant and it was decided to operate the plant with high voltage low frequency circuits and so simplify the electrical circuits.

Conference With Doctor Steinmetz

Before this step was taken the writer had a conference with the late Dr. C. P. Steinmetz and the change in electrical circuits was made under the advice of that authority on electrical corona and other electrical phenomena.

Certain other radical changes were made, these changes being embodied in several patents taken out in the name of the writer and assigned to the C and C Developing Co.

After these changes had been made the plant was operated for one year in an endeavor to accumulate sufficient information so that a more modern plant could be built and the commercial possibilities of the system developed.

Almost at the start it was found that the crux of the whole proposition lay in the development of an insulator that would withstand the rigors of the service under which it had to operate. There was no use in trying to work out the heat questions involved until the corona discharge could be kept constantly in operation.

The conditions that had to be met by this insulator were exceedingly severe, not from the standpoint of electrical voltage but from the standpoint of hot dielectric strength of the material of which the insulator must be fabricated. The problem also involved the thermal expansion and contraction of the material.

Practically what had to be done was: Development of an insulator that would withstand the puncture effect of 30,000 volts when the insulator was at temperatures up to 950° F., as well as withstand the mechanical distortion due to the fact that the lower half of the insulator, that part lying wholly within the reaction tube, extended into the hot zone of the vapors and was at their temperatures, while the upper half projected from the tube and was at the temperature of the surrounding air, and the middle zone lay in a packing gland, which must necessarily be of short length to avoid inherent packing troubles due to a deep gland.

This combination presents the inherent difficulties of a hot zone and a cold zone separated by a short zone through which the temperature gradient is very steep.

Any material such as glass, porcelain dry or wet process, and lava did not meet the requirements. Not only did they lose their dielectric strength at slightly elevated temperatures but they broke mechanically in the stuffing box.

Final recourse was made to fused Brazilian rock quartz. This material while it lost its dielectric strength at temperatures in the neighborhood of 350° F., was mechanically perfect in that the coefficient of thermal expansion was practically zero.

In the beginning these insulators cost $750 each and when they were punctured electrically or broken mechanically they could not be repaired and had a scrap value of less than $5. Today after the solving of this perplexing problem insulators cost $65 each, do not puncture or break down otherwise electrically and if broken mechanically can be repaired at the factory for a fraction of the original price.

After certain data had been obtained from the old plant it was dismantled and a new plant containing 20 reaction tubes was built. As the work of development progressed the number of operating tubes has been cut to five while the gasoline production has been increased over 10 times, showing that after the development of the insulator and the maintaining of the corona in the tubes gasoline could be produced in commercial quantities.

The flow sheet shown in Figure 1 is simple.

The charging stock under pressure is pumped through a primary heater which is in practice an ordinary pipe still. In this primary heater, depending on the type of charging stock handled, the pressure and heat are so maintained that there is little if any vaporization of the oil, the procedure here being to put latent heat into the oil which later, when expansion takes place, will be turned into heat of vaporization and cause better and more complete vaporization.

Dependent on Vapor-phase Cracking

The oil in liquid form in the primary heater is not heated enough to be cracked as the success of the whole work is dependent on vapor-phase and not liquid-phase cracking. An Engler distillation is usually made of the charging stock and the temperatures in the primary heater are carried at slightly less than the flask cracking temperature of the oil.

From the primary heater the oil passes into a vaporizor. As the pressure in the vaporizor is seldom more than 1½ pounds per square inch, the hot oil expands from the primary heater pressure and the greater part of it vaporizes. The heavy bottoms pass to the lower part of the vaporizor where they are entrained up to a certain level. Methane gas is admitted below the level of this entrained oil. The hot gas blowing through the oil assists in reducing the vapor tension of these heavier bottoms and gives better vaporization.

This methane gas serves two other functions: (1) It aids as a noncondensable carrier gas which assists the flow of vapors through the system. (2) Fixed gases made in the cracking operation and recycled with methane apparently act to give some hydrogenation in the cracking zone and by recombining with the heavier carbon fractions in the charging stock prevent formation of carbon in the cracking zone and a lowering in gravity of the charging stock, thus permitting a longer recycling operation.

(In the present plant, which is not recycling, oil has been passed through the system over 50 times and the same high grade gasoline has been uniformly made.)

The vapors from the vaporized oil as well as the admitted methane pass through a vapor preheater where the temperature is raised to slightly below the cracking temperature of the reaction tubes.

Raised to Cracking Temperature

From the vapor preheater the vapors pass into the reaction tubes and are raised to the cracking temperature and at the same time are acted on by the silent corona discharge.

The reaction tubes are 15-foot lengths of standard 12-inch pipe set vertically. At the top of the pipe are arranged a stuffing box and gland into which the entrance insulator is packed. This insulator is set in the exact center of the reaction tube. From its lower end hangs the wire on which the corona is produced. This wire is of small-diameter michrome steel and has an insulating bob suspended on its lower end. This bob is guided by an insulating thimble thus permitting lengthwise but prohibiting sidewise motion.

With this method of suspension the wire never has any outside strain placed on it, is free to move lengthwise as it or the tube may expand or contract due to variations of temperature and cannot move from its position axially central with the tube. It is therefore impossible to have a spotty corona and the corona action is even over the whole length of the reaction zone.

After reaction the vapors are taken through a fractionating tower the heavy unchanged portions going back for recycling while the gasoline distillates and fixed gases formed pass on to the condensor. After condensation of the gasoline the fixed gases are drawn off, the gasolines going to the crude gasoline tanks.

Heat exchangers and other standard refinery equipment will be placed where practice sanctions in order that thermal efficiency and economy will be properly taken care of.

No Massive Construction

The assembled unit requires no massive construction but uses simply pipe and fittings for the vapor preheaters and reaction tube banks. It is therefore possible to have low cost for the plant as well as low repair costs.

In operating the experimental plant, which is not under automatic thermal control, there have been times when the control of the heat got away from operators and holes were burned in the reaction tubes. No explosion or disastrous fire resulted, the plant being quietly closed down, the vapors permitted to burn themselves out and in less than 48 hours new tubes were welded in and the plant again was in operation.

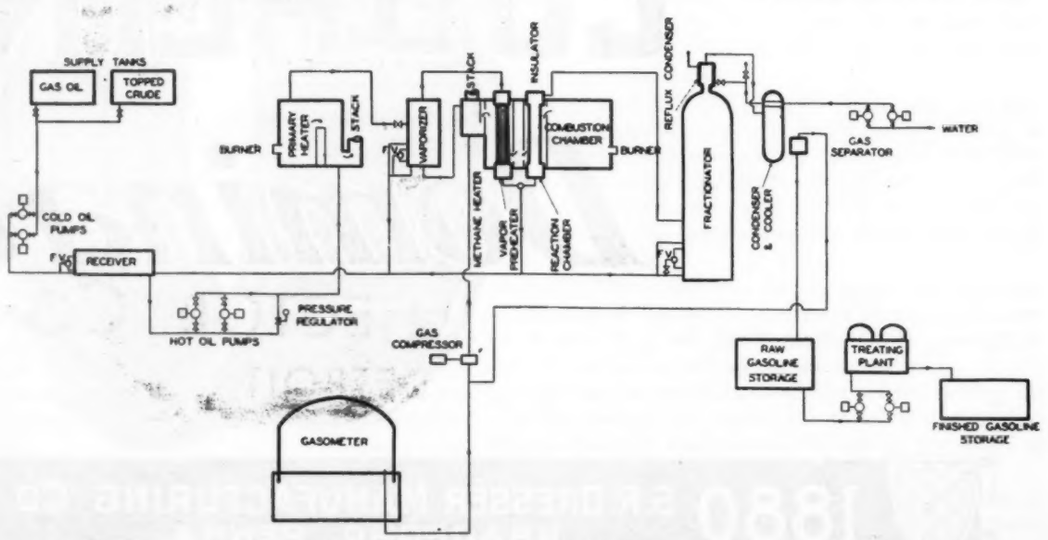
There are two theories as to the actual effect of the corona:

(1) That by the more perfect ionization of the vapors than heat alone can effect we have a more perfect change of the molecule.

(2) The corona discharge acting as an agitator keeps the vapors in a state of violent turmoil driving them against the hot wall of the tube and thus obtaining a more efficient heat cracking than could exist if the vapors channeled through these tubes.

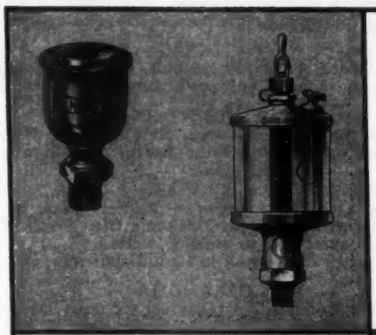
There is no question but that the corona plays its part and efficiently, as when the plant is operated without the corona

(Continued on Page 92)



Flow chart showing equipment and operation of C and C process.

RECOMMENDED



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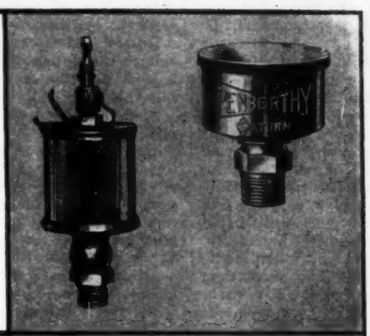

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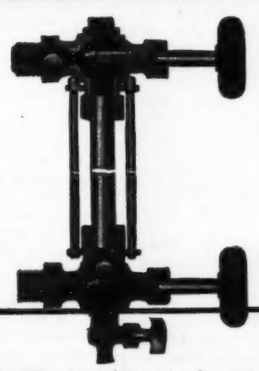

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DR. SPELLER TALKS TO ENGINEERS ON OIL FIELD CORROSION PROBLEM

By Thomas F. Smiley

"Steel Alloys and Corrosion of Oil Field Equipment," was the subject of an address given Monday evening of this week by Dr. Frank N. Speller, Pittsburgh, Pa., director of the metallurgical department of the National Tube Co., before the Mid-Continent section of the American Institute of Mining and Metallurgical Engineers in the Tulsa Building, Tulsa. The meeting was a special one, called by the section chairman, H. H Power.

In connection with his discussion of corrosion problems, Doctor Speller, who is chairman of the Metallurgical Advisory Board in Pittsburgh, told how that body had been organized four years ago by about 20 steel manufacturers, acting in conjunction with the United States Bureau of Mines and the Carnegie Institute of Technology, with a view of perfecting steel-making processes and creating a product better suited to meet the requirements of the petroleum and other industries. He predicted that in a short time the steel industry would pool all its problems relating to the quality of its products.

Corrosion, Doctor Speller said, is believed to be costing the oil industry $150,000,000 annually. Three major factors enter into the problem: (1) Availability of oxygen; (2) the protective skin or coating that forms on metals subjected to corrosive influences; and (3) the galvanic effect of different materials coming into contact with metal under varying conditions. Doctor Speller explained that all metals tend to form on their surface a protective film the character of which is governed by the environment. This film usually is invisible.

Chromium Unique as Resistant

Chromium, the speakers said, is unique in that it resists so wide a range of corrosive influences. Although probably the most highly corrosion-resistant metal known to science, it does not owe this characteristic so much to any inherent quality as it does to its property of forming a protective film on its surface in most of the environments existing in industry.

Nickel alloys are valuable, Doctor Speller pointed out, because of the stabilizing effect of this metal. In many instances, he said, a secondary problem arises in the effort to maintain a corrosion-resisting quality after it has been gained. Addition of nickel aids in attaining this end, a 25 per cent proportion of nickel with chromium producing complete stabilization.

Better control of temperature is an important factor in checking corrosion of refinery equipment, Doctor Speller said, and he explained that oftentimes corrosion does not affect the strength of pipe and other steel products so much as is supposed. Pitting that does not penetrate to half the thickness of pipe reduces its strength in small degree only.

No Panacea for Corrosion

There is no single panacea for corrosion troubles, Doctor Speller asserted Each problem must be studied separately and the remedy applied must be the one that seems to meet the peculiar conditions involved.

Slides showed the effects of different agencies employed in retardation of corrosion as a result of formation of a protective film, including sodium silicate, caustic soda and sodium dichromate. Other slides showed cycles of reversed flexural stress for rupture of such oil field equipment as sucker rods, which break from "corrosion fatigue" at points where the corrosion begins its progressive, file-like deteriorative action; effect of salt water, as in oil wells; corrosion of steel under sand and silica films; corrosive effects of a given soil on different kinds of steel; the marked remedial effect of reheating and then suddenly cooling metal that has been subjected to corrosion, and samples of Egyptian iron made without melting more than 2,000 years ago and still in fair condition.

At the close of the address many of the engineers present took advantage of Mr. Power's invitation to ask questions, which were answered by Doctor Speller.

OIL MAN'S CALENDAR

DECEMBER

1-5—Memphis, Tenn., ninth annual Asphalt Paving Conference, Hotel Peabody.

2-4—Omaha, Neb., convention, Nebraska Independent Oil Men's Association, Paxton Hotel.

3-4—Indianapolis, Ind., Indiana Petroleum Association, Hotel Severin.

8—New Orleans, La., American Institute of Chemical Engineers.

JANUARY

3-10—New York, National Automobile Show.

10-16—St. Louis, Mo., twenty-eighth annual convention, American Road Builders Association.

14-15—Minneapolis, Minn., Minnesota division, Northwest Petroleum Association, Radisson Hotel.

19-23—Detroit, Mich., annual meeting, Society of Automotive Engineers Book-Cadillac Hotel.

24-31—Chicago, National Automobile Show.

29-30—Grand Forks, N. Dak., North Dakota division, Northwest Petroleum Association, Dacotah Hotel.

FEBRUARY

16-21—San Francisco, Calif., National Western Metal Congress and Exposition.

MARCH

16-22—Los Angeles, Calif., second annual Exposition, Oil Equipment and Engineering Exposition.

19-20-21—San Antonio, Tex., American Association of Petroleum Geologists, Gunter Hotel.

MAY

4-9—Charlotte, N. C., Good Roads Convention.

Memphis, Tenn., Natural Gas Department, A.G.A.

FAVOR PERCENTAGE PLAN FOR OKLAHOMA CITY POOL

The meeting held by the Oklahoma Corporation Commission in Oklahoma City on Monday and Tuesday of this week to consider changing the method of proration in the Oklahoma City Field for a time to a percentage basis was recessed until December 15. In the meantime conferences will be held with pipe line companies to ascertain if these purchasers and carriers can take care of all the oil to be produced under the percentage plan. An effort will be made to care for all permitted production in the field. During the recess companies which are under their permitted production at this time will be given an opportunity to catch up on their output so that when and if the percentage method is made effective, all producers can start under that plan on an even basis.

It was claimed for the percentage plan, whereby wells are pinched or choked, that it would prevent gas waste, allow the gasoline plants full-time operation, would aid in curbing the sand menace and also the salt water menace. At the same time, the percentage plan would permit operators to run some oil daily and thus insure a more or less steady income from the sale of oil.

CURTAILING IN NORTH TEXAS

FORT WORTH, Tex., Nov. 24.—The Humble Oil & Refining Co.'s nominations in North Texas, beginning November 27, will be 5,050 bbls., 1,650 bbls of this amount coming from Cooke and Montague, 3,100 bbls. from Wichita, Archer and Wilbarger and 300 bbls. from north Young County.

The Prairie Oil & Gas Co. has announced it would cease taking oil from the Kisinger Pool in south Young County. This is to go into effect December 1, 1930.

High Spots in Field News

NORTH LOUISIANA-ARKANSAS

Zwolle proven district extended 1 mile southeast of production.

GULF COAST

Matagorda County wildcat blowing dry gas, possible new field at Citrus Grove.

CALIFORNIA

Weed Patch, Kern County, discovery to be drilled deeper. New tests at Belridge and Kettleman Hills.

SOUTHWEST TEXAS

Three new spots in Southwest Texas, southwestern Kerr County, northeastern Jim Wells County and new pool in Duval County.

TEXAS

State-wide allowance set at 680,238 bbls. for 60 days, instead of 7,750,000 bbls. Railroad Commission to enforce common purchaser law.

ROCKY MOUNTAIN AREA

Seven wells drilling in Eunice area, New Mexico. Hobbs allowable cut. Pool extended third of a mile. Pilot Butte well bigger than originally brought in.

KANSAS

Prairie withdraws as crude buyer in Voshell Pool, in addition to Panhandle, Texas, and cutting runs in Oklahoma City Pool. Kansas production further curtailed by extension to smaller wells.

Well half mile south of Voshell has good showings of oil and gas.

OKLAHOMA

State Corporation Commission takes recess until December 15 to ascertain from pipe line companies whether they can take all the oil on a percentage basis and also to allow companies which have underproduced to catch up. Seems probable percentage basis will be inaugurated during next period of proration.

Late Fields

WYOMING

DENVER, Colo., Nov. 25.—The Resolute Oil Co.'s No. 1, NE SW, SE, Section 17-57-101, on the Badger Basin Dome in Park County, Wyoming, 10 miles southwest of the Elk Basin Field and 25 miles north of Cody, deepest hole drilled in the Rocky Mountain area, encountered a flow of gas estimated at 1,000,000 to 1,250,000 feet a day, in the top of the Frontier at 8,255 feet, according to scout reports received by several companies. A newspaper dispatch quoted President Julius Peters as saying that oil went over the top of the derrick, but the scout reports are to the effect that no oil is showing. The hole is open below 4,050 feet and will have to be cased. Fishing for tools is in progress at this time.

OKLAHOMA

One of the largest wells in the State located in the Oklahoma City Field was tested again on Monday, November 24. The well is the British American Oil Co.'s No. 5 Holmes, NW cor. SE Section 10-11-3w, on the west side of the pool. It has flowed 76,213 bbls. in 23 hours and 4 minutes. The gas volume is estimated at 45,000,000 feet a day. The well was completed several weeks ago.

The actual production of the Oklahoma City Pool for the seven days ending November 24 was as follows:

Date—	Prod.	Wells prod.	Total wells comp.
November 18	90,828	81	652
November 19	64,149	64	651
November 20	83,419	71	651
November 21	64,075	71	651
November 22	63,383	66	652
November 23	84,069	72	653
November 24	88,316	67	654

Hicks Drilling Co. and others' No. 1 Crouch, NW cor. SW Section 5-6-5, southeastern Pottawatomie County, wildcat, was drilling deeper at 4,292 feet with a hole full of fluid. No production test was made at this depth. It was drilling in green shale. The showing of oil was found in the Simpson sand.

Limestone Oil & Gas Co.'s No. 1 Maxey, SE cor. NW, Section 21-5-18, Latimer County wildcat, was dry in sand at 2,668-2,763 feet. The test will be abandoned.

Tom Slick Oil Co.'s No. 1 Jones, SE

(Continued on Page 129)

MAGNETIC STORM

The Tucson observatory of the United States Coast and Geodetic Survey reports the beginning of a moderate magnetic storm at 9 a.m. (CST) November 24. The telegram follows:

"Storm began twenty-fourth. Fifteen. Moderate."

SCORE SHEET ON OIL PRODUCTION

Below is shown allotted average daily production in the United States from October 1, 1930, to April 1, 1931, suggested by the American Petroleum Institute's special committee on the economic situation, and the actual daily average production during the week ending November 22:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
Okla., Kans., S. W. Tex., North Tex.*	953,700	905,431	.....	48,269
West Texas and S. E. New Mexico	316,300	311,858	.....	4,442
North Louisiana-Arkansas	86,400	96,020	9,620	.....
Gulf Coast	177,800	180,539	2,739	.....
Rocky Mountains	58,600	58,782	182	.....
California	530,100	605,500	75,400	.....
Other fields	110,600	112,000	1,400	.....
Total	2,233,500	2,270,130	89,341	52,711

Net average daily overproduction, 36,630 bbls.

*North Texas includes North, Central and East Central Texas and Texas Panhandle.

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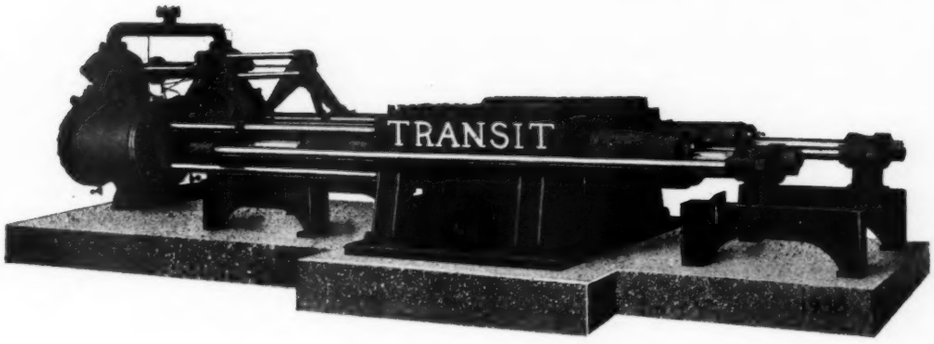

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Last Winter we worked day and night to keep up with the orders for TRANSIT Hot Oil PUMPS, but even then we were unable to meet the demand.

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E. L. Wilson Hardware Company

PHOENIX, ARIZ.
Pratt-Gilbert Co.

ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

Los Angeles
Tulsa
Houston

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PA.

New York
Philadelphia
Cleveland
Pittsburgh

Oklahoma Production Down to Demand

Purchasers Who Some Time Ago Named 545,000 Bbls. a Day Have Reduced Their Nominations to 485,000 Bbls.

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Announcement of the construction of a pipe line into the Oklahoma City area by the Continental Oil Co. makes the second successive week that a new pipe line was entering the Oklahoma City area. The survey was announced several months ago and the right of way acquired, but the company held up the actual work on line until recently. The new line will be an 8-inch welded, with a total capacity of 12,000 bbls. a day, with one pipe line station. The capacity may be increased to 20,000 bbls. a day by the installation of a second station. The total length of the line will be 81 miles. Production in the State declined around 22,000 bbls. a day for the week ending November 22. The daily average was approximately 483,800 bbls.

The Prairie Oil & Gas Co. announced during the week it was reducing its shipments from the Oklahoma City Field 12,000 bbls. a day. It has been handling around 15,000 bbls. a day and now plans to run only 3,000 bbls. from that field. A survey of the other pipe line companies in the area shows no tendency to reduce their runs or shipments from that field.

Sinclair Oil & Gas Co.'s new 12-inch pipe line from Oklahoma City to Coffeyville, Kans., is expected to be completed and tested within another week and it is believed it will handle only its own production for the present time.

The Oklahoma Corporation Commission may reduce the allowable production in the State. A preliminary report by the Mid-Continent Oil and Gas Association subcommittee reveals the market demand has declined to approximately 485,000 bbls. a day, which is a reduction of around 60,000 bbls. a day from the allowable production fixed by the State's proration orders which were 545,000 bbls. for November and 535,000 bbls. for December. It is expected the Corporation Commission will be asked to revise the order as soon as the committee completes its work.

Ordered to Cease Drilling

During the week the state fire marshal ordered the Century Oil Co. to cease drilling on the Wheeler School property in Section 10-11-3w, in Oklahoma County. The company has 10 days to file notice of appeal.

It is the first order of its kind ever issued in the State of Oklahoma. It is believed the company will make a court test of the fire marshal's authority.

Orders were also issued to other oil companies to remove eight 1,500-bbl. storage tanks 300 feet or more from the school. Most of the tanks were within 100 feet of the school building. The tanks were owned by the British-American Oil Co. and J. E. Mabee Drilling Co.

The Oklahoma Corporation Commission decided on the question of gas wells in the Oklahoma City Field after several hours' discussion that the so-called combination wells were gas wells. The list of gas wells fixed by the commission as gas wells is as follows: Phillips Petroleum Co.'s No. 1 Traders; Tom Slick Oil Co.'s No. 1 Baker, No. 1 Huffman, and No. 1 Glidden; Mid-Kansas Oil & Gas Co.'s No. 2 Fortson; Coline Oil Co.'s No. 4 Olds; Cromwell-Franklin Oil Co.'s No. 7 Trosper Park and No. 28 Trosper Park; Wirt Franklin Petroleum Corp.'s No. 3 Thiemer and No. 1 Lowery; Indian Territory Illuminating Oil Co.'s No. 1 A. Bodine, No. 1 S. Bodine, No. 2 E. Fortson, No. 2 Fortson-Farley, No. 3 K. Henning and No. 2 E. Joyce; Anderson-Prichard Oil Co.'s No. 2 Gibbons, and Garvin and others' No. 1 Harris.

The curtailment of production in the southern counties of Oklahoma was revised during the week when the Oklahoma Corporation Commission changed its statewide order affecting the eight southern counties, following the protest by the operators of the area. The operators claimed that a large number of leases were making water and that to prorate these leases under the order of October 28, would injure the properties. The new order made by the Oklahoma Corporation Commission was as follows: "It is therefore the order of the Commission, premises considered, that the terms and provisions of the order No. 5,369 made, entered and promulgated on the twenty-eighth day of October, 1930, be and they are hereby extended and made applicable to all that district comprising Stephens, Marshall, Carter, Grady, Garvin, Jefferson, Cotton and Comanche Counties, and in the various oil pools and producing leases in such area, provided, however that the umpire and operators committee heretofore designed, selected and appointed for said area, be and they are hereby authorized upon application of the operator of any oil or gas lease in said area and proper showing, to temporarily exempt from the terms and provisions of said order any such leases where it is shown that the encroachment of water would injuriously affect the wells thereon so as to prevent, rather than aid conservation of crude oil and petroleum. That said umpire and committee shall investigate any such conditions, even though temporary exemption may be extended, so as to ascertain fully the facts with respect to said exemption, and report to the commission the result thereof with its recommendation as to whether or not the lease should be permanently exempted by the commission, and if upon final investigation any such lease temporarily exempted should be found by the commission to be subject to proration and not entitled to exemption, then and in that event any such lease shall be required to make up any overproduction during the said exemption, over and above that which said lease would have been entitled had no exemption been extended.

"As provided in said order No. 5,369 this matter will be left open for recommendation by the umpire and operators committee for modification as conditions may justify from time to time."

Resume Work in Roger Mills

The wildcat test of Bucy & Stone in Roger Mills County has been taken over by the Ute Oil Co. and drilling operations will be resumed. The test is No. 1 Williams, C SW, Section 23-12-24w, and the leases in a block in southern part of the county, were included. The test was shut down at 2,245 feet and there has been no development work for more than six months. As soon as the hole is cleaned out the 10-inch casing will be landed and drilling resumed.

Considerable leasing has been in progress in Roger Mills County since the middle of the summer, with Roy M. Johnson and J. Bunn both of Ardmore, assembling approximately 150,000 acres up to the present time. Part of the acreage has been core drilled.

Recent lease purchases were reported to include the following: Roy M. Johnson in Townships 14-24w, 12-24w, 12-25w, 13-25w, 11-24w, 14-23w, and Sinclair Oil & Gas Co. in Townships 13-23w, 13-24w, and 12-25w, all in Roger Mills County.

Tatums Pool Activity

The Tatums Pool in Carter County is southern Oklahoma's most active area. During the week two large producers were completed on the edge of the field adding approximately 4,000 bbls. a day to the potential.

Magnolia Petroleum Co.'s No. 2 M. Dickerson, SW cor. SE NE Section 24-1s-3w, flowed 2,465 bbls. the first 24 hours from a series of sands at 1,935-2,131 feet. The well is a north offset to No. 1 Dickerson, which was recently completed as a dry hole at a total depth of 4,240 feet, where it was abandoned. Northerly, the Carter Oil Co. and others' No. 1 J. Hooks, NW cor. SE NE Section 24-1s-3w, swabbed 1,222 bbls. of oil in 17 hours, and will probably be a 2,000-bbl. initial producer. Production was found at 1,910-2,072 feet and the total depth of the well is 2,132 feet. Both of these wells are located on the east edge of the producing area and offset locations are owned by the same companies.

A new semiwildcat location was announced in S. Sparks and others' No. 1 Carter, SE cor. NW NW Section 13-1s-3w, about three-fourths of a mile north of the nearest production. C. L. Anderson and others have two tests with the last string of casing cemented and are preparing to test one. No. 6 Eaves, NE cor. NW SW Section 24-1s-3w, has casing cemented at 2,357 feet and is rigging up to drill out plugs. No. 7 Eaves, SW cor. NE SW Section 24-1s-3w, is shut down at 2,372 feet with casing cemented. Magnolia Petroleum Co. has several tests with the casing cemented and the Trevlyn Oil Co. has a test it is expected to complete during the week.

Magnolia Petroleum Co.'s No. 1 Harmon, NW cor. SW Section 28-1s-3w, is being abandoned at a total depth of 4,350 feet as a dry hole. It is located about 2 miles southeast of production in the Tatums Field in Carter County. The same company has made a location to the west for No. 1 Pool, NE cor. SE Section 29-1s-3w, an offset to the deep test which was abandoned. The company expects to drill a test to the shallow sand between 500 and 600 feet, where a showing of oil was found in the deep test.

In the Cement District

In the Cement district of Caddo County, Magnolia Petroleum Co.'s No. 8 Lindsey, NE cor. NW SE Section 36-6-10w, an old well drilled deeper, swabbed 128 bbls. in 24 hours from sand at 3,385-92 feet. The same operator's No. 3 White, SW cor. SE Section 25-6-10w, a wildcat, is drilling at 4,957 feet in shale. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp.'s No. 2 Gregory, SE cor. NE SW Section 31-6-9w, was plugged back from 4,523 feet to sand at 3,323-36 feet for a production test.

Stephens County

Stephens County has four operations, three of them in the new field southeast of the town of Comanche, and are cementing casing to test oil sands. Two other tests in the county were abandoned during the week. The new pool, 2 miles east of Comanche, continues the most active in the county. Carter Oil Co.'s No. 1 L. S. Toney, NW cor. NW NE SW, Section 27-2s-7w, Stephens County, has cemented casing on top of the pay horizon at 1,494-99 feet. The test is an offset to the discovery lease in the area and found the sand 4 feet higher than the two other producing wells in the pool.

G. Pace's No. 4 Dilly, NW cor. NE NW SW, Section 27-2s-7w, on the discovery lease in the extension area, is preparing to test sand at 1,498-1,503 feet, after plugging back to shut off the water. The Texas Company's No. 1 Toney, SE cor. SW NW, Section 27-2s-7w, a north offset to the discovery lease, has cemented casing and is to test an oil sand at 1,498-1,504 feet. F. Jones and others' No. 1 Toney, SW cor. NW SE, Section 27-2s-7w, two locations east of the Dilley lease on which the discovery well was drilled, missed the regular pay horizon and was drilling deeper at 1,956 feet.

Ven-Mex Oil Co.'s No. 4 Neigh, NE cor. NW, Section 34-1s-8w, Stephens County, was drilled deeper to a sand at 1,956-66 feet, and is being completed for an estimated 2,500,000 feet of gas. H. Hanbury's No. 1 Palmer, SE cor. NW NE, Section 31-1s-8w, a wildcat, is being abandoned as a failure at a total depth of 2,805 feet.

G. Pace's No. 1 Green, NW cor. SW SE NE, Section 2-2s-8w, a wildcat, is dry at 2,251 feet and may be abandoned. Dixie Oil Co. and McMan Oil Co.'s No. 3 Pitts, SW cor. NE NW SE, Section 3-2s-8w, a wildcat between the Comanche

(Continued on Page 108)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.; shut down.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	Shut down 765 ft.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 430 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-2-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,605 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Drlg. 1,810 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Drlg. 4,170 ft.

CADDO COUNTY

Magnolia's No. 1 White, SW SE Sec. 25-6-10w	Drlg. 4,727 ft.
Abernathy & Brown's No. 2 Houston, Sec. 24-6-11w	Shut down 1,090 ft.
Simms Pet. Co.'s No. 1 Cobsa, SW NW Sec. 24-6-11w	Drlg. 3,980 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Shut down 6,518 ft.

COAL COUNTY

Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Drlg. 125 ft.
Mid Western Oil Co.'s No. 1 Gum Bros., C SW NW Sec. 30-3-10	Drlg. 1,054 ft.
A. M. Van Orden's No. 1 Jamison, SE SW Sec. 31-1-9	Shut down 1,668 ft.
Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9	Drlg. 5,030 ft.
W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Shut down 3,030 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 3-3-10w	Drlg. 1,640 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,825 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Shut down 100 ft.

(Continued on Page 153)

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Kansas Production Further Curtailed

Prairie, Phillips and Skelly Companies Extend Proration to Smaller Wells. New Pipe Lines to Schurr and Eastborough

By W. A. Spinney
Staff Correspondent, Kansas Fields

As the result of the announcement of three major pipe lines, Prairie, Phillips and Skelly, curtailing the runs from wells of over 5 bbls., the State's production for the week ending November 22 shows another decline of around 2,500 bbls. a day. The daily average for the entire State was approximately 109,000 bbls. With the pipe line companies prorating in all areas in the State and with some only handling their own oil production further declines may be expected.

An important meeting of the state proration committee composed of Lee Scott, Vickers Petroleum Co., chairman; A. L. Derby, Derby Oil Co.; Ralph Pryor, Slick, Pryor & Lockhart; Fred Haskell, Empire Pipe Line Co., and R. B. Roark, Shell Petroleum Corp., was held in Wichita November 24. The meeting was called for the purpose of working out an equitable curtailment of production in all the producing areas in the State. The plan is expected to be similar to the Oklahoma proration plan. The action at this meeting will be found elsewhere in this edition.

Potential production was increased in the Schurr Pool in Rice County during the week by the completion of another well. Phillips Petroleum Co.'s No. 2 Mezger, SE cor. SW NE Section 21-20-10w, found the pay horizon at 3,329-38 feet, where oil rose 250 feet in the hole in three hours. A swabbing test will be made, after which it will be shut in to await a pipe line connection.

Pipe Line to Schurr Pool

The Schurr Pool operators have been without a pipe line outlet for several months and are waiting the completion of the Prairie Pipe Line Co.'s new 8-inch line into the area. When the new pipe line is completed to the Schurr Pool, it is expected it will handle about 50 bbls. a day from each well in the pool. Nine wells are completed with an estimated potential of 12,000 bbls. a day. The Vickers Petroleum Co. and others have two tests shut down near the top of the pay horizon on their lease and it is believed these tests will be drilled into the Silicious lime pay in the next week.

Delay Drilling in Ellis County

Phillips Petroleum Co. announces it will abandon its drilling campaign in the Shutts Pool, in Ellis County, until 1932. The company owns a large block of acreage northeast of Hays, which has been proven productive during the last year It is believed the majority of these leases have until 1933 to run and in view of the economic conditions in the oil industry no more drilling will be done in the area until it is necessary to protect the leases.

Two tests are being completed in the Shutts area by the Phillips Petroleum Co. No. 1 Staab, NE cor., Section 18-12-17w, appears to be a dry hole at 3,733 feet. The test was also dry in the upper horizon of the Oswald formation.

No. 1 Herman, NE cor., Section 7-12-17w, swabbed 64 bbls. in 11 hours and thereafter was swabbing at the rate of 50 bbls. a day. It is expected to be put to pumping in a few days. When these two tests are completed Phillips Petroleum Co. will stake no more locations until the spring of 1932 in the Shutts district.

Skelly Oil Co. announces it has joined with the Prairie Oil & Gas Co. and Phillips Petroleum Co. in the plan of prorating the small producing wells on the same basis as the plan being used in Oklahoma. The plan is prorating producing wells making more than 5 bbls. a day, to 50 per cent of the excess production. It is presumed that wells making 5 bbls. a day pay the operation cost and all leases averaging more than 5 bbls. daily per well will be curtailed 50 per cent of the excess quantity.

Kingman Produces Gas

The northwestern part of Kingman County looks favorable for gas production. Skelly Oil Co.'s No. 1 Miles, NE cor., Section 30-27-10w, a wildcat, is flowing gas from two different horizons, and a third is being cased off. The first gas was found at 1,635-40 feet and was estimated at 2,000,000 feet a day, the next showing of gas, which was braden headed, was found at 2,005-20 feet. It gauged 6,000,000 feet. The third showing, at 2,133-42 feet, is estimated at 3,500,000 feet. The test is shut down at 2,142 feet. The company may take measures to conserve the lower flow of gas. Some express the opinion that more gas horizons may be found between the present depth and the top of the Kansas City lime, which is expected to appear around 3,200 feet. The area was core drilled by the Shell Petroleum Corp. and a leasing campaign followed.

Watching Canton Area

The Canton area in McPherson County is at present commanding considerable attention since the Mid-Kansas Oil & Gas Co.'s No. 1 Garrett, in Section 30-19-1w, found the deep sand productive. The well made as high as 3,430 bbls. in 24 hours from a new producing horizon for the area at 3,407-14 feet. The first announcement of a new location in the area was made by C. B. Davis for No. 1 in the SE cor. SW, Section 19-19-1w, a half mile north of discovery well. Development work is expected to be underway in a few days. The lease was farmed out by the Shell Petroleum Corp. to C. B. Davis a couple of weeks ago. Several other interesting tests are expected to be started in the near future.

The Texas Company's No. 5 Munn, NE cor., Section 12-20-2w, made 130 bbls. the first hour and added another large producer to the Ritz Pool in McPherson County. The second hour's production was 125 bbls. and is coming from the chat at 2,921-62 feet. A full 24-hour gauge was 2,605 bbls. A mile and half north is the Mid-Kansas Oil & Gas Co.'s No. 1 Garrett, which is the largest producer in the county, making 3,430 bbls. in 24 hours from the Simpson horizon at 3,407-14 feet.

Another new test in the Canton area is United Petroleum Co.'s No. 1 Kaegi, NE cor., Section 20-19-1w, which is rigging up standard tools. The test is located about 2 miles northeast of the Mid-Kansas Oil & Gas Co.'s deep sand producer, which is north of the Ritz Pool. in McPherson County.

Wildcat Test in Ellsworth

Another wildcat test was announced during the week for Ellsworth County. Aylward, Allhouse and others' No. 1 Stratmann, SE cor. SW SE, Section 1-17-10w, is expected to start operations in the near future. The test is located about 3½ miles north of the recently completed Slick, Pryor & Lockhart's No. 1 Heiken, which is estimated to be a 2,000-bbl. well from the Silicious lime. The new test is located on a block of 800 acres, and offsetting the test. Leases are owned by Prairie Oil & Gas Co., Skelly Oil Co., Continental Oil Co. and Gypsy Oil Co.

North of the Fairport Pool, in Russell County, J. H. Liggett's No. 1 Whitson, SW cor. NW SW, Section 16-11-15w, is rigging up. The new test is located about midway between the Durham and Chrisler wells which were drilled by the same operator.

New Pipe Line to Eastborough

A new pipe line was completed into the Eastborough Pool during the week by the Continental Oil Co. The first connection made was with the Siegel Brothers and Globe Refining Co.'s No. 1 Soukup, in Section 19-27-2. The Continental Oil Co.'s main pipe line from the Valley Center Pool runs near the east edge of the Eastborough Pool, and the oil from the Siegel Brothers and Globe Refining Co.'s lease will be carried through the new line to a point in Oklahoma, where it will be switched to the Globe pipe line and transported to the Globe Refining Co.'s plant at Blackwell, Okla.

Magnolia Petroleum Co. is building a pump station on its Wheeler lease in Section 19-27-2, at the western terminus of the Eastborough-Augusta pipe line, which is a 4-inch line recently constructed to the new producing properties of the company in the Eastborough Pool from its refinery, the former White Eagle plant, at Augusta.

The most northwestern producer in the States which was recently completed by Aylward, Seeley & Boyson, No. 1 Silvers, in Section 21-8-19w, Rooks County, is still shut down for want of an outlet for the crude oil at a total depth of 3,240 feet. The well is estimated to be a 400-bbl. producer daily.

Plug Back Deepest Test

The deepest test in the State is being plugged back to test upper formations. Watchorn Oil & Gas Co.'s No. 2 Morrison, NW cor NE Section 20-32-21w, Clark County, was drilled to a total depth of 6,909 feet, where a fishing job developed and it is being plugged back to 6,530 feet to test a showing of gas found while drilling deeper.

May Repressure Churchill Lease

A repressuring program may be established in the Churchill Pool, in Sumner County. The Shell Petroleum Corp. is drilling two tests in the pool, and if both of these tests are found to be dry holes they will be used as spot wells to repressure the area with residue gas from the company's nearby gasoline plant. The tests are No. 11 Churchill, CSL NE SW, Section 25-31-2, and No. 6 Ruter, C SW NE, Section 25-31-2.

The Continental Oil Co. and Gypsy Oil Co. have completed a 10-inch salt water disposal pipe line from the Valley Center Pool in Sedgwick County to Wichita. The owners are now laying the gathering lines. In testing the main line only one leak was found. It is estimated the Valley Center salt water output is 25,000 bbls. a day, while the pool is making around 10,000 bbls. a day of oil.

The Lost Springs Field in Marion County which was discovered about four years ago by Harwood & Winters is again being developed as the result of the recent discovery of R. E. Youker, extending production to the northeast. The well was R. E. Youker's No. 1 Riffel, NW cor. SW SW, Section 11-17-4, Marion County. The Harwood Oil Co.'s No. 1 Cowman, NW cor. NE SW, Section 11-17-4, is an interesting test and if production is found it will again extend production to the northeast. The production in the field has been spotted and disappointing to some of the owners of leases, as many of the offsets to producing wells were found to be dry holes. During the last two years very little drilling had been done in the area until about two months ago. R. E. Youker's No. 1 Riffel, in Section 11-17-4, is a 100-bbl. well from the chat at 2,300 feet. Most of the production in the pool is owned by Phillips Petroleum Co., having purchased the holdings of Harwood & Winters, which consist of about 35 producing wells. Other operators in the field are T. C. Johnson and Stearns & Streeter.

McPherson County

Labengayer & Gurley made location for No. 1 Rolander, SW cor. SE SW, Section 30-18-2w. Broswood Oil Co. has the rig up for No. 1 Giffin, C NW SW, Section 14-19-2w, Ritz Field. Carey and Shell Petroleum Corp. staked location for No. 1 Smith, C NE SW, Section 15-19-2w. Miller and Shell Petroleum Corp. and others' No. 1 Blair, NW cor., Section 32-19-1w, is a location. Otstot and others made location for No. 2 Munn, SW cor., Section 6-20-1w. Mid-Kansas Oil & Gas Co.'s No. 1 Garrett, SW cor. NE, Section 30-19-1w, has been completed for 3,327 bbls. at 3,407-14 feet in Viola lime. Lario Oil Co. and Shell Pe-

(Continued on Page 108)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Drlg. 480 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w	Shut down 1,600 ft.

BUTLER COUNTY

McCulloch and Empire's No. 1 Lilley, SW NW NW Sec. 23-23-5	Drlg. 2,246 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Drlg. 1,170 ft.

CLARK COUNTY

Watchorn's No. 2 Morrison, NW NE Sec. 20-32-21w	T. D. 6,909 ft.; plugged back to 6,530 ft. to test show gas.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Shut down 2,390 ft.

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14	Shut down 818 ft.
McGregor's No. 1 Wood, NE NW SW Sec. 20-22-15	Shut down 650 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Shut down 1,250 ft.

COWLEY COUNTY

Roth & Farout's No. 1 Reedy, SW NW NE Sec. 8-32-8	Fishing 912 ft.
Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4	Shut down 2,650 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Shut down 2,775 ft.

DOUGLAS COUNTY

Steinbuckle's No. 1 Unknown, SW NE NW Sec. 34-14-21.	Shut down 1,100 ft.

ELLIS COUNTY

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w	Fishing 3,916 ft.

ELK COUNTY

Aladdin's No. 1 Donnell, NE SE SW Sec. 26-29-10	Wilcox 2,386-2,411 ft.; show oil; shut down.

ELLSWORTH COUNTY

Aladdin Pet.'s No. 1 Stoddenberg, C SW Sec. 22-16-10w	Rig on ground.
Milton et al's No. 1 Koster, SE NE Sec. 6-14-9w	Shut down 330 ft.
Aladdin and Carter Oil Co.'s No. 1 Barecky, C NW Sec. 3-16-10w	Shut down 2,718 ft.
Slick et al's No. 1 Hecken NW cor. Sec. 25-17-10w	3,000,000 ft. gas 2,980-91 ft.; 3,221-43 ft.; 68 bbls. 1 hr.; 147 hrs.; 359 bbls. 4½ hrs. shut down; estimated 2,000 bbls. a day; comp.

FORD COUNTY

Swain et al's No. 1 Taylor, C NW Sec. 21-25-24w	Shut down 4,200 ft.

(Continued on Page 97)

Do not confuse so called liquid vapor phase cracking processes with the Pratt Process for manufacturing high antiknock blending fluid

Merely cracking oil partially in the vapor phase does not impart the all important high antiknock characteristics to the oil which is one of the outstanding features of the Pratt process.

Two important steps are embodied in the Pratt Process; precracking and distilling the original charging stock, and high temperature cracking the condensate of the precracked and distilled charging stock.

Both steps are performed in continuous long cycle operation on any liquid hydrocarbon.

If it cost more to manufacture Pratt's blending fluid from your topped crude it would pay you to do it but fortunately the cost of manufacture is no more than to make ordinary cracked gasoline.

The Automotive Distillate Corporation

Licensors of the Pratt Vapor Phase Cracking Process

Continental Life Bldg.,

ST. LOUIS, MO.

Matagorda Wildcat Blowing Dry Gas

Possibility of a New Field at Citrus Grove. Another Deep Test Planned in Esperson Field. Overhanging Ledge at Lost Lake

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Nov. 24.—Interest of Gulf Coast operators at the close of the week was centered at Citrus Grove, southwestern Matagorda County, where a deep wildcat test was blowing dry gas, indicating possibilities of a new field. This test, Empire Gas & Fuel Co.'s No. 1 Boker, blew in late Friday while coring in a sand showing gas at a total depth of 6,252 feet. As this is written the well still is out of control and operators are trying to pump mud to kill the pressure. No estimate of gas volume or pressure are available.

This is the first strictly wildcat development on the Gulf Coast in several months, new development having been curtailed to a minimum. Citrus Grove is one of the latest geophysical salt dome prospects, having been checked early this year both by torsion balance and seismograph. Credit for locating the prospect is given the H. C. Cockburn Corp., which turned the acreage to the Empire Gas & Fuel Co. The prospect, as outlined, centers in the J. J. Criswell Survey, located several miles east of the town of Collegeport, approximately 10 miles west of the Big Hill (Gulf) Dome and 15 to 20 miles south of the Markham Field.

Empire's No. 1 Boker, which blew out, is the first test drilled on the prospect. Its location is 25 feet east and 425 feet north of the SW cor. of Lot 14 of the Robbins and Middle Subdivision of the J. J. Criswell Survey. It topped the gas sand at 6,248 feet after coring shale from 6,241 feet. Coring to 6,252 feet, the well blew in. The hole is cased to 5,370 feet with 9⅝-inch pipe and it is not anticipated there will be much trouble in bringing the well under control. In the event of its completion as a gas well, it is just 5 miles east of the Houston Pipe Line Co.'s gas line to Big Hill which will furnish connections.

Another Deep Test

Another important deep test, Yount Lee Oil Co.'s No. 3 Moores Bluff, on the southeast side of the Esperson Field, western Liberty County, was trying to blow out late in the week, encountering a sand from 7,822-36 feet. The importance of this test lies in the fact that stratigraphically it is the deepest test ever drilled on the Gulf Coast. The formation it is in has been identified as being the upper Saline Bayou, a subdivision of the Cook Mountain. With the exception of this same field where two other deep tests have gone into formation identified as that of the Yequa, which overlies the Cook Mountain, no other tests on the Gulf Coast have gone below the Jackson, so far as has been definitely determined.

The encountering of these formations at Esperson and not at any other coastal field or dome, although much deeper tests have been drilled, has thrown a very interesting light on that area. Esperson is a geophysical prospect and it has been assumed that it is a salt dome. If it is a dome, these lower strata have been uplifted without the salt breaking through into the upper formations as has been the case at other salt domes. If not a dome, the Esperson area gives indication of a very major uplift of some kind unlike anything so far found on the Gulf Coast.

This is the second blowout encountered by Yount Lee Oil Co.'s No. 3 Moores Bluff. The test, which passed up the shallower productive sands at Esperson, drilled to 7,592 feet, where it blew out last August and was estimated to have made 50,000,000 feet of dry gas daily for several days until killed. After that the stuck drill stem was sidetracked to its preset depth, blowing out again while coring.

Makes Field Attractive

The several shallow sands already producing over a wide area, the fact that this production is Grade A oil and the extremely favorable possibilities for deep production have made Esperson one of the most attractive of the newer fields. In addition to the Yount Lee Oil Co.'s blowout, developments at Esperson during the week included the abandonment by Cranfill-Reynolds Co. of its No. 1 Vajdak, a deep test, and the location by the same company for a deep test on the extreme southwest side, approximately 1,500 feet from present development, all shallow. The Vajdak test has had a rather hectic record. Started in August of 1929 by the predecessor of the Cranfill-Reynolds Co., the Union Exploration Co., as a north offset to Yount Lee Oil Co.'s No. 1 Moores Bluff, the discovery well which found production at 3,320 feet, it missing that sand, tested salt water in two successive lower sands, and was drilled to 5,750 feet. At the latter depth it was completed as a small gasser in December, 1929, but was shut in until April of this year. Deepened to 7,386 feet it swabbed a small amount of oil and since has been drilled to 7,592 feet where drill stem stuck. After several sidetracking jobs it has been quit.

The new deep test, for which derrick already is up, will be Cranfill-Reynolds Co.'s No. 1 Kirby fee, located in the M. Duncan Survey, 1,505 feet from the east line and 150 feet from the north line of the tract. This is strictly new territory, southwest of the west side of production. Previous deep drilling has been on the east and south sides of the present field.

Further Important Development

Another important coastal development the past week was at Lost Lake, where Pure Oil Co.'s No. 5 Lost Lake has proved the existence of an overhanging ledge. This test, located on the extreme west side of the outlined dome drilled through cap rock at 5,160-85 feet and anhydrite from 5,185 to 5,234 feet at which depth it went back into formation. It then topped a second stratum of anhydrite at 5,396 feet, from which it drilled back into formation, a soft sand, at 5,431 feet. It is now at a total depth of 5,488 feet fishing core barrel.

Drilling through this ledge at Lost Lake follows revolutionary developments this year at Barbers Hill and Allen Domes, where important production has been found underlying protruding masses of cap rock and salt around these domes. Since the developments at Barbers Hill and Allen considerable interest has been attached to the possibilities of finding similar conditions at other, if not all, coastal salt domes. This is the second dome, not including Barbers Hill and Allen, at which cap rock and salt has been drilled through recently to bear out the overhanging ledge theory of salt dome formation. Several weeks ago Navarro Oil Co.'s No. 5 Davis on the southwest side of Big Creek, Fort Bend County, drilled through salt and into formation but this test has been abandoned with drill stem lost in the hole.

Gulf Coast Production

Daily average production of the pools in the Gulf Coast area for the week ending November 22 follows:

SOUTHEAST TEXAS

Allen	24
Barbers Hill	20,970
Batson	1,072
Big Creek	3,332
Blue Ridge	1,659
Brenham	150
Boling	899
Clay Creek	1,132
Damon Mound	682
DeWalt	12,071
Esperson (Sheeks)	2,850
Fannett	683
Goose Creek	4,344
Hankamer	1,921
High Island	668
Hull	8,016
Humble	13,928
Jasper County	23
Lost Lake	386
Markham	203
Moss Bluff	98
Mykawa	279
Nash	228
North Dayton	1,158
Orange	1,984
Orchard	2,263
Pierce Junction	9,817
Port Neches	1,378
Raccoon Bend	8,927
Refugio	27,151
Saratoga	1,268
Sour Lake	2,149
South Liberty	2,974
Spindletop	14,197
West Columbia	4,131
Total Southeast Texas	152,938
Total week ending November 15	154,079
Decrease	1,141

SOUTH LOUISIANA

Anse La Butte	32
Bayou Blue	47
Bayou Bouillon	160
Black Bayou	929
Edgerly	386
Jennings	2,002
Hackberry	2,660
Lake Barre	2,298
Lake Pelto	87
Lockport	4,333
Port Barre	2,460
Sorrento	67
Starks	670
Sulphur	3,760
Sweet Lake	1,153
Vinton	5,435
Welsh	121
White Castle	1,062
Total South Louisiana	27,601
Week ending November 15	26,400
Increase	1,201
Total Gulf Coast	180,539
Week ending November 15	180,479
Increase	60

Interesting Test in Sulphur

In connection with efforts of operators to drill through cap rock and salt around the edges of domes following the discoveries at Barbers Hill and Allen, an interesting test is drilling in Sulphur, La. This is Union Sulphur Co.'s No. 764 fee, which topped salt at 4,453 feet and at latest report had drilled 1,586 feet into it and still was drilling. This lacked only 61 feet of equaling the amount of salt drilled through by the record well at Barbers Hill, Mills Bennett Production Co.'s No. 3 E. W. Barber, which went through 1,647 feet of salt before going back into formation.

Completions the past week included five producers and one abandonment at Refugio; one producer and three abandonments at Raccoon Bend, three producers and one abandonment in the new extension area north of Vinton, three producers at East Hackberry, one each at Lockport and Saratoga, one abandonment each at Allen, Spindletop, Stratton Ridge and in the McFaddin district of western Victoria County.

At Refugio, four of the new wells were in the deep sands, the fifth being Ed Price's No. 2 Mission River, flowing

(Continued on Page 106)

GULF COAST FIELDS AND WILDCATS

Week Ending November 22

All Rotary

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 4 Barber, north	Total depth 1,383 ft.; reaming.
Mills Bennett Prod. Co.'s No. 10 Barrow (workover)	Drlg. hard sandy lime 4,907 ft.
Mills Bennett Prod. Co.'s No. 3 Gulf Fisher, south	Drlg. hard sand 1,165 ft.
Humble Oil & Ref. Co.'s No. 6 fee, west	Pulling liner 6,602 ft.
Humphreys Corp.'s No. 1-B Barber, north	Total depth 6,793 ft.; sidetracked and drlg. shale 3,549 ft.
Humphreys Corp.'s No. 2-B Barber, north	Drlg. sand and lime 1,148 ft.
Humphreys Corp.'s No. 6-A Barber, northwest	Drlg. sand and lime 5,143 ft.
Humphreys Corp.'s No. 1 Louise Fitzgerald, north	Drlg. anhydrite 1,184 ft.
Humphreys Corp.'s No. 1 Morgan (workover)	Total depth 6,404 ft.; pulling liner.
Humphreys Corp.'s No. 8-B Kirby (workover)	Drlg. oil sand 5,278 ft.
Humphreys Corp.'s No. 10-A Kirby (workover)	Drlg. sandy lime 3,078 ft.
Humphreys Corp.'s No. 1 Winfree, west	Drlg. hard sand and shale 4,690 ft.
Republic Prod. Co.'s No. 3 Kirby (workover)	Waiting on orders 6,700 ft.
Sinclair Oil & Gas Co.'s No. 2 Smith, west	Sandy shale showing oil 5,595 ft.; to set csg.
Sun Oil Co.'s No. 5 Chambers (workover)	Set insert screen 5,429 ft.
Sun Oil Co.'s No. 6 Chambers (workover)	No report.
Sun Oil Co.'s No. 7 Chambers, south	Drlg. rock 2,727 ft.
Sun Oil Co.'s No. 12 Wilburn fee, east	Oil sand 4,801 ft.; set casing.
Sun Oil Co.'s No. 13 Wilburn fee, east	Waiting on orders.
The Texas Company's No. 1 Williams, southwest	Total depth 6,268 ft.; reaming.
The Texas Company's No. 1 Winfree, west	Drlg. hard sand, lime and pyrites 4,606 ft.
Yount Lee Oil Co.'s No. 1 Hindman, southwest	Milling out of casing 6,300 ft.
Yount Lee Oil Co.'s No. 16 Chambers, south	Drlg. oil sand 4,688 ft.
Yount Lee Oil Co.'s No. 17 Chambers, south	Rigging up.
Yount Lee Oil Co.'s No. 3 Fisher, southwest	Coring sandy shale 6,975 ft.
Yount Lee Oil Co.'s No. 6 Phillips, east	Waiting on orders.
Yount Lee Oil Co.'s No. 1 Winfree, west	Drlg. shale and lime 1,842 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 2 Duncan-State	Abandoned 3,856 ft.
Humble & Valley's No. 3-B Hardy	Derrick.
Humble & Valley's No. 9 Mueller	Derrick.
Humble & Valley's No. 7 Payne	Derrick.
Humble & Valley's No. 8 Payne	Derrick.
Humble & Valley's No. 1-B Reese	Abandoned in sandy shale 4,957 ft.
Humble & Valley's No. 1-B Remmert	Shale 3,856 ft.; abandoned.
Humble & Valley's No. 6 Saunders	Derrick.
Humble & Valley's No. 2 Sherrod	Derrick.
Humble & Valley's No. 11 Thompson	Comp. flowing 118 bbls. 3,250 ft.
Humble & Valley's No. 6 Woodley	Derrick.
Humble & Valley's No. 7 Woodley	Derrick.
Humble & Valley's No. 8 Woodley	Derrick.
Humble & Valley's No. 9 Woodley	Derrick.
Humble & Valley's No. 10 Woodley	Drlg. sand and shale 3,425 ft.

HUMBLE—HARRIS COUNTY

Cullen West's No. 5 Lee, south	Drlg. shale 4,122 ft.
John Deering's No. 2 Bennett	Sand and shale 4,069 ft.; cmtd. 6⅝-in. csg. 4,000 ft.
P. S. Griffith's No. 1 fee	Drlg. shale 2,774 ft.
LaRue, trustee's No. 1 Crane, northwest	Derrick.
M. LaRue's No. 1 Tuffly, northwest	Gumbo 1,405 ft.; shut down.
Southern Coastal Oil Co.'s No. 2 Perkins	Drlg. shale 1,802 ft.
South Texas Pet. Co.'s No. 3 Burt, east	Drlg. shale and lime 3,680 ft.
Sun Oil Co.'s No. 13 Bender (workover)	Pulling liner to deepen 4,589 ft.
Sun Oil Co.'s No. 14 Bender, west	Drlg. shale 5,608 ft.
Sun Oil Co.'s No. 16 Bender	Derrick.

(Continued on Page 114)

"A WELL THAT BEGINS WELL

HAS THE BEST CHANCE TO END WELL"

So say the users of the

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"All's well that ends well" must be remembered pretty early in the game with an oil well, because it is the oil well that begins well - - - that ends well. Straight hole from the start is the big thing - - - and the "big thing" that does that job is the Guiberson 20" Surface Bit, one of the largest of the Guiberson Disc Bits. It retains, amplified in proportion to its size, every one of the famous Guiberson Disc Bit features.

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GUIBERSON

BETTER BE SAFE THAN SORRY

Three New Spots in Southwest Texas

Southwestern Kerr County, Northeastern Jim Wells County and New Pool in Duval County Hold Attention

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Nov. 24.—Three new spots are threatening to break into the producing column in Southwest Texas as a result of last week's developments. Evans' No. 1 Love in southwestern Kerr County had enough gas and oil that it caught fire and burned down the rig besides causing all sorts of commotion among operators and scouts. E. R. Thomas' No. 1 Duval Land Co., in Survey 135 in Duval County, 1½ miles south of the Schoolfield-O'Byrne Pool, at 2,303 feet, flowed by heads and is to set casing and test.

J. E. Walsh's No. 1 Wade, in northeastern Jim Wells, set casing at 2,908 feet after a drill stem test showed a lot of gas. It should be ready to test the last of this week. It is 7 miles south of the Cartwright Field in Live Oak County and about 3 miles south of the Mathis gas area which furnished some big wells but is not now producing.

Kerr County Test

The Kerr County test of L. L. Evans on the Love ranch in J. Martinez Survey No. 1,594, had a showing of oil at 2,252 feet but not sufficient to make a commercial well. About the middle of last week it ran into a showing of oil at 3,347 feet and when at 3,374 feet there was enough gas that it caught fire and burned the rig down. Thursday morning it made a head of oil and later started heading oil every three hours, the oil spraying in the burning gas.

Friday at a little after noon it choked in or bridged over and the fire went out. Already preparations were being made to bring in new derrick material and new rig will be moved in. It was estimated by some that the heads of oil might be as much as 60 bbls. The gas volume was only moderate.

It is presumed that the formation is the Pennsylvanian. The well is north of the Balcones fault and in strictly wildcat territory and the showing is therefore the more important. It is easily 75 miles from nearest important production, which would be the Somerset Field near San Antonio and it is about the same distance southwest of the nearest production in Coleman County.

It is probably the most important showing ever had on the southeast rim of the Permian Basin and hence is sure to attract a lot of attention. The acreage around the well, including a big block, is owned by Evans with the exception that The Texas Company has one survey cornering on that in which the well is located. The Gulf Production Co., Sun Oil Co., and California Co. each own small tracts a mile or so south. The Texas Company owns a big block lying to the west and Gulf and Independent Oil & Gas Co. each own a considerable block to the south. Leases in that part of the country were all taken on long time and at a low price.

It may be some days before there will be additional important developments on the Evans well. New rig must be moved in and built and the debris cleared away before they are in shape to go back into the hole. The oil both at 2,252 feet and 3,374 feet is high gravity, estimated at 40 to 42 gravity.

New Duval County Pool

In Duval County, E. R. Thomas' No. 1 Duval Land Co. is setting casing at 2,288 feet and total depth is 2,303 feet. The well flowed and made several heads before bridging. It is 990 feet from the north line and 1,320 feet from the west line of Survey 135 and about 1½ or 2 miles south of the Schoolfield-O'Byrne Pool in northwestern Duval County. The pay in the Schoolfield-O'Byrne Pool is at 2,350 feet. The difference in depth may be accounted for in elevation and the sands be the same. It may be an important extension to the Schoolfield-O'Byrne Pool.

Jim Wells Gas Well

J. E. Walsh's No. 1 Wade, in northeastern Jim Wells County, is as important as anything that has developed in recent weeks. Total depth is 2,916 feet and casing set at 2,908 feet. Production in the Mathis and Cartwright Fields to the north is at around 2,150 feet and hence there is no possible connection between them. The Walsh well looks like the opening of a new pool and thus far the indications are gas. On drill stem test it made quite a showing of gas. With the exception of the gas fields to the north the Walsh test is a good many miles from any production.

Completions

Completions the past week were neither numerous nor startling. Darst Creek had only one, Magnolia Petroleum Co.'s No. 14 Thomas Dix at 2,605 feet for 200 bbls. Chapman Pool in Williamson County had one, E. R. Marts' No. 1 T. P. Simmons, a 300-bbl. well at 2,084 feet. In Laredo district there were two gas wells and one oil well completed, all in proven acreage, the oil well being O. W. Killam's No. B-33 Cuellar for 100 bbls. at 1,585 feet. The gassers were Co-operative Drilling Co.'s No. 4 Dunn at the north end of the Cole Field for 30,000,000 feet at 1,729-42 feet in Duval County and Alamo Drilling & Leasing Co.'s No. 2 Benavides in Webb County for 10,000,000 feet at 2,290 feet.

To make up for the one completion in the Dart Creek Field eight new locations were made by Gulf, Louisiana and Magnolia Petroleum Co.

None of the failures announced the past week had attracted any undue attention at any time. Adams & Lyles' No. 1 Seligman, east of Seguin in Guadalupe County in a territory where many wildcat dry holes have been drilled, is the possible exception. It is dry and abandoned in the Edwards at 2,513 feet. Top of the chalk is 1,939 feet.

In the Escobas Pool in Zapata County S.R.C.'s No. D-2 Montemeyor reported previously as a completion swabbed 740 bbls. in 24 hours, which is larger than when first reported. It is estimated it will flow at least 200 bbls. daily and is the biggest well completed in some weeks in the pool.

Southwest Texas Production

Daily average production of the pools in the Southwest Texas area for the week ending November 22 follows:

Bexar	186
Branyon	24
Bruner	15,445
Buchanan	142
Chapman	5,200
Dale	317
Duval	193
Darst Creek	33,421
Kingsville	117
Larremore	25
Luling	9,443
Lytton Springs	757
Manford	250
McMullen	30
Medina	22
Mirando	14,283
Normanna	32
Pettus	8,902
Saxet	56
Somerset	1,453
Yoast	283
Total	89,581
Week ending November 15	97,448
Decrease	7,867

Cartwright Pool

Of the various other operations in Southwest Texas that have been attracting more than ordinary attention and considered of more than ordinary importance, Houston Oil Co.'s No. 22 Cartwright in the Cartwright Pool in Live Oak County which fought gas for weeks before being able to set casing made only about 3,000,000 feet when finally brought in at 5,430 feet. It is rather disappointing. It gave a ray of hope in that it showed a trace of oil. The company's other deep test in that field, No. A-1 Boothe at the north end of the field, is waiting for cement to set after setting casing at 5,266 feet.

Penn Oil Co.'s No. 1 Junker in DeWitt County at 4,666 feet is in shale and has created no excitement since it spudded in. It is on what has been called a "high-powered" block of leases and is very disappointing considering the favorable geology it has.

Penn Oil Co.'s No. 1 Kosub, a little

(Continued on Page 108)

SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Morgan Bros.' No. 3 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur.	T. D. 550 ft.; set csg.
F. H. Eckert's No. 1 Drobrowolski, 400 ft. from W line, 150 ft. from S line of lease, Sur. No. 52	Location.
W. R. Swearingen's No. 2 Halberdier, 300 ft. SE of No. 1 J. Perege Sur.	T. D. 460 ft.; standing.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur.	Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur.	Location.

DART CREEK FIELD—GUADALUPE COUNTY

Gulf Prod. Co.'s No. 5 Tadlock, 300 ft. S of No. 3, 150 ft. from W line	T. D. 2,295 ft.; drlg.
Gulf Prod. Co.'s No. 15 Dix-McKean, 450 ft. out of NW cor. of lease	Location.
Gulf Prod. Co.'s No. 10 Posey-Baker, direct offset to No. 4 Annie Knodel of Magnolia Pet. Co.	Location.
Humble Oil & Refining Co.'s No. 2-A Dowdy, NE cor. of "A" lease	T. D. 2,654 ft.; dry and abnd.
Humble Oil & Ref. Co.'s No. 1-B Sue Denman, 150 ft. from the N and W lines of lease, in the extreme NE cor. of the J. C. Darst Sur.	T. D. 485 ft.; drlg.
Magnolia Petroleum Co.'s No. 14 Dix, 150 ft. from SE line, 600 ft. from SW line, Dix lease, Robinson Sur.	T. D. 2,605 ft.; comp. for 200 bbls. flowing.
Magnolia Petroleum Co.'s No. 15 Thomas-Dix, offset to No. 4 Klein	Location.
Magnolia Petroleum Co.'s No. 5 Klein	Location.
Magnolia Petroleum Co.'s No. 4 Klein, 300 ft. W of No. 1, 150 ft. from NW line of lease, Robinson Sur.	T. D. 2,634 ft.; preparing to pump.
Magnolia Petroleum Co.'s No. 6 Rand Miller, 150 ft. from NW line, 450 ft. from SW line, Alexander Sur.	T. D. 2,627 ft.; estimated at 400 bbls.
The Texas Company's No. 6 Anderson, 300 ft. W of No. 1, 613 ft. from S line	T. D. 2,208 ft.; drlg.
The Texas Company's No. 6-A Knoblock, 750 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur.	T. D. 1,580 ft.; drlg.
The Texas Company's No. 7-A Knoblock, 1,225 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur.	T. D. 1,450 ft.; drlg.
The Texas Company's No. 9-A Knoblock, 450 ft. from NE line, 600 ft. from SE line of lease, Robinson Sur.	Location.

(Continued on Page 115)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

BLANCO COUNTY

Company, farm and location—	Remarks:
Ben H. Ashe Pet. Corp.'s No. 1 Glasscock, moving in to drill on leases out of the Rodson block north of Blaco City	Location.
Hardy-Sitton's No. 1 McMillan	T. D. 570 ft.; standing.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,429 ft. to E line of James Stanford's No. 155	T. D. 660 ft.; standing.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 550 ft.; correction; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 23	T. D. 985 ft.; fishing.
G. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,250 ft. to N line, Sur. No. 94	T. D. 375 ft.; standing.

BASTROP COUNTY

Pacific Oil & Gas Co.'s No. 1 J. M. Litton, 150 ft. N and W lines of tract	T. D. 2,050 ft.; drlg. in chalk.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 375 ft.; standing.
Champion et al's No. 1 Smith, 2,541 ft. to NW line, 663 ft. to SW line of tract, T. Standifer Sur.	T. D. 2,388 ft.; drlg.
Schimmel & Batts' No. 2 Trigg, 975 ft. S No. 1, James Stewart Sur.	Drlg. 1,350 ft.
R. S. Bolling's No. 1 McWilliams, 150 ft. from N line, 1,111 ft. from W line of Wm. McWilliams tract, Glasscock Sur.	T. D. 2,125 ft.; drlg.; show oil 2,056-60 ft.

BROOKS COUNTY

Ed East's No. 3 B. Garcia, 150 ft. from N and W lines of Blk. 5, Share A-1, Las Mastena y Gonzalene grant	Location.
Southern Crude Oil Purchasing Co.'s No. 1 Holbien-Wormser, 900 ft. from E line, 1,000 ft. from S line of Blk. 39, E. P. de Maguellas Sur.	T. D. 5,048 ft.; drlg.

BEE COUNTY

William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy, C Blk. 9 of 11,000-ac. Quincy Subd. of Bee County	T. D. 5,762 ft.; shut down.
Huribut et al's No. 1 Mrs. D. Chestnut	T. D. 5,010 ft.; shut down.
Walter Rawlins' No. 1 P. L. Campbell, C B.&B. Sur.	T. D. 3,880 ft.; coring.

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Zwolle District Proven Area Extended

Effect of Six Dry Holes Counteracted in Part by Completion of Sabine Syndicate 600-Bbl. Wildcat Mile Southeast of Production

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Nov. 24.—The effect of six dry holes in the Zwolle district of Sabine Parish last week was counteracted somewhat by an extension of proven area in the east end of the territory approximately a mile southeast of the group of producers in Section 4-7-12. The wildcat Sabine Syndicate's No. 1 Pearce in the SE NW, Section 10-7-11, topped the chalk at 2,352 feet and was completed at 2,392 feet flowing 600 bbls. Three new locations in the vicinity were made immediately by other operators and with the north extension of Zwolle proving a disappointment in both the shallow marl and deeper chalk horizons it is probable that the scene of most activity in the district will shift from the north to the south of the discovery area.

Three of the six dry holes were in the north extension, one of them having production a short distance east and west of it. Loring Oil Co.'s Nos. 1 and 2 Middleton in the east and west corners, respectively, of the NE SE, Section 26-8-12, were abandoned at 2,650 feet. Just north of them is Dixie Oil Co.'s No. 1 Parrott, also a dry hole. A. H. Tarver's No. 4 Sabine Lumber Co. in the SE cor. SE NW, Section 26, with production on each side was dry at 2,482 feet, from about which his three other wells are producing, and drilled on to 2,892 feet without getting a show.

A quarter of a mile north of Pelican Natural Gas Co.'s Nos. 4 and 5 Sabine Lumber Co. in Section 11-7-12, both producers, Loring Oil Co.'s No. 13 Bowman-Hicks in the SE cor. SW SE, Section 2-7-12, was abandoned at 2,650 feet as a dry hole. These three tests are a mile south of the discovery zone.

Tests Not Encouraging

Drill stem tests scattered over the field were not encouraging. McDaniel & Lieber's No. 1 Batson, 1½ miles northwest of the north extension group, in Section 16-8-12, was dry at 2,440 feet and has a fishing job at 2,460 feet. Standard Oil Co.'s No. 1 Bowman-Hicks, SW SE, Section 25-8-12, was dry at 2,559 feet and is drilling at 2,616 feet, and A. H. Teat's No. 1 Craig, NE NE of the same section is shut down for orders after testing dry at 2,530 feet. The Texas Company's No. 1 Maines, NE SE, Section 5-7-11, offsetting one of the Pelican Natural Gas Co.'s producers in Section 4, was dry at 2,286 feet. R. L. Gay's No. 8 Bowman-Hicks in the NW SW, Section 18-7-13, a mile east of production in the Blue Lake area of Zwolle which had 1,500 feet of oil in the hole from 2,494 feet last June but would not flow after much nursing along, was deepened to 2,552 feet and finally abandoned. Magnolia Petroleum Co.'s No. 1 Giauque in the NW SW, Section 26-7-14, 2 miles south of Blue Lake production is abandoned at 4,014 feet as a dry hole. Gay had a show of oil and gas at 2,234 feet in No. 9 Bowman-Hicks, NE NW, Section 18-7-13, but it tested dry and he is drilling at 2,250 feet.

Triangle Drilling Co. got its fourth Trinity gasser in the Sugar Creek district of Claiborne Parish when No. 1 Stevenson, SW SE, Section 6-19-5, and a quarter mile west of the nearest well was completed at 4,323 feet gauging 35,516,000 feet of gas at 1,800 pounds from 20 feet of broken formation. The 9-inch was cemented at 4,134 feet on No. 1 Brownfield in the NW NE of the same section.

Pipe Strung for Line

Right of way has been cleared and pipe strung for a 10-inch line to run from the Triangle well to connection with United Gas Co.'s Monroe-Waskom main line and much of the material is on the ground and foundations have been built for the Louisiana Gas & Fuel Co.'s (United Gas Co.) absorption plant which will process the gas. Both the two other deep wells active in Claiborne have cemented their surface strings. Louisiana Oil Refining Corp.'s No. 10 Langston in Section 19-21-7, Homer proven area at 226 feet, and Prairie Oil & Gas Co.'s No. 1 Shackelford, a wildcat in Section 30-23-5, at 611 feet, the latter being one of the longest strings of 12½-inch employed in this territory.

Harry Morgan's No. 10-B Kennedy in Section 22-19-11, Bellevue district of Bossier Parish, turned out to be a better well than at first estimated. Completed at 1,750 feet in 7 feet of sand, and not the oolitic lime of the upper Trinity series as previously reported, it gauged 41,760,000 feet of gas at 760 pounds with no water showing. Louisiana Oil Refining Corp.'s No. 14-B Bodcaw, a test for the Trinity stuff on the north flank of the dome, got two joints of mud and a little gas on drill stem test at 2,044-63 feet and 15 joints of water at 2,180 feet.

R. O. Roy's No. 1 Hunter in the SW SW, Section 24-16-11, about 3 miles east of Elm Grove, had 3 feet of sand showing a little oil and is setting 6⅝-inch at 2,546 feet for a test, total depth 2,586 feet. Palmer Corp. abandoned derrick for No. 2 Roberson in the NW NE, Section 26-23-12, Carterville district of Bossier. The Texas Company's No. 16 Wilkinson, SW NE, Section 36-23-12, pumped 60 bbls. initial from 3,168 feet. Pine Island district of Caddo Parish contributed two to the week's list of dry holes, Shreveport Oil Corp.'s No. 1-A Muslow, NW NW, Section 32-21-15, at 2,190 feet and Tholl Oil Corp.'s No. 13 Bashara, SE SE, Section 23-21-15, at 1,650 feet.

DeSoto Parish

In DeSoto Parish Holly Oil Co.'s No. 1 Talbot, NW NE, Section 9-13-13, 1½ miles southeast of Holly production, was dry at 3,004 feet. Arkansas-Louisiana Pipe Line Co.'s No. 3 Johnson, Section 1-11-14, was dry at 3,090 feet and drilling below 3,100 feet. J. W. Clark's No. 1 Tidwell, Section 32-13-14, picked up another small show of oil at 3,084 feet, 134 feet below the first one, and shut down for orders. C. D. Neff has taken 2,000 acres in Township 11, Range 14, northwest of Benson, for a well to go 3,200 feet.

Texas-Louisiana Production Co.'s Monroe deep test, No. 1 Fisher, in Section 34-21-5, Morehouse Parish, 3 miles southwest of Bastrop was dry at 2,350-2,421 feet and is shut down after getting salt water on another test at 2,421-64 feet.

With only 14 operations under way, and most of them locations and derricks in the entire field embracing parts of Morehouse, Ouachita and Union Parishes, the Monroe gas district is nearly out of the picture so far as development is concerned, and was entirely so the last week in the matter of completions. Richland, with 21 operations, including locations, derricks and rigs, is slightly more active but reported only one completion, Palmer Corp.'s No. 12 Rhymes-England, Section 33-17-6, gauging 9,669,000 feet of gas at 765 pounds from 2,450 feet.

There has been a gradual slowing down in both districts for the last two or three months but with a maximum allowable pull of 1,537,419,203 feet per day available from a total open flow of 2,423,349,914 feet there is ample reserve beyond the requirements of carbon plants and pipe lines and consumers dependent on these two sources have no fear of a cold winter from fuel shortage.

Daily Average Runs

Daily average runs from the field again were about on a par with those of the preceding week, minor fluctuations in all pools save Zwolle which dropped 190 bbls. and Caddo light which increased 340 bbls., holding the net result to an increase of 40 bbls. from North Louisiana pools totaling 44,115 bbls., were 75 bbls. more than last week and Arkansas' 51,905 bbls. was 35 bbls. less. Shipments from the several pools averaged:

NORTH LOUISIANA

Caddo, light	8,540
Caddo, heavy	2,780
Homer	3,350
Haynesville	5,240
DeSoto-Red River	2,840
Elm Grove	515
Bellevue	740
Cotton Valley	1,840
Urania	5,280
Pleasant Hill	480
Sarepta-Carterville	2,370
Zwolle	9,120
Holly	1,020
Total	44,115
Last week	44,040
Increase	75

ARKANSAS

El Dorado	2,910
Smackover, light	4,830
Smackover, heavy	35,735
Stephens	890
Nevada County	1,040
Lisbon	900
Champagnolle	3,430
Bradley	60
Mount Holly	70
Urbana	1,040
Total	51,905
Last week	51,940
Decrease	35
Both states	96,020
Last week	95,980
Increase	40

Location in Bed of Lake

Louisiana Gas & Fuel Co., which holds a state lease on the bed of Catahoula Lake and a big block to the north, has released location for No. 1 Tensas in the

(Continued on Page 106)

WILDCAT OPERATIONS IN MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e...Fishing 6-in. and tools 2,392 ft; T.D. 2,735 ft.

ATTALA COUNTY

Ark.-La. P. L. Co.'s No. 1 H. A. Moore, 500 ft. W, 330 ft. S, N cor. SE NW, Sec. 2-15-5e ....Cored chalk and streaks of lime 2,376 ft.

CLAY COUNTY

Ohio Oil Co.'s No. 1 Cantrell, NE cor., Sec. 16-15-5....Drlg. 2,236 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 ....S.D. 1,700 ft.

GRENADA COUNTY

F. E. West et al's No. 1 Dubard, NW NW, Sec. 18-22-4..Derrick.

HINDS COUNTY

Attkison & Dyers' No. 1 Wiggins, Sec. 33-6-1e....Derrick.
Cane River O. & G. Co.'s No. 1 Kabbles, NE cor. SW SW, Sec. 15-5-1e ....Drilled plug; swbd. S.W; showing little gas; T.D. 2,541 ft.
Gulf Ref. Co.'s No. 1 McLaurin, 1,230 ft. S, 1,410 ft. W, NE cor., Sec. 20-6-2e ....Cmtd. 9-in. 2,466 ft.
Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e ....Rig up.
Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor. SW NW, Sec. 3-5-1e ....Rig up.
Dr. Barney Kennedy's No. 1 fee, 150 ft. E, 200 ft. N, SW cor. NE NE, Sec. 34-6-1e ....Location.
Love Pet. Co.'s No. 1 Maley, SE cor., NW, Sec. 15-5-1e ..Top Midway 2,387 ft; top chalk 2,487 ft. and cmtd. 6⅝-in; claim oil show estimated 10 bbls., 13° gravity clean oil, no gas 2,487-2,490 ft; flowed 25 bbls. oil and 300 bbls. wtr. 105° F; T.D. 2,494 ft; W.O.S.R.
Love Pet. Co.'s No. 1 Morton Lbr. Co., 1,500 ft. E, 1,525 ft. N, SW cor., Sec. 34-6-1e ....Drlg. shale 1,850 ft.
Miss. Pet. Co.'s No. 1 Baptist Orphanage, 175 ft. E, 130 ft. N, SW cor. SE SE, Sec. 28-6-1e ....Cmtd. 6⅝-in. 2,481 ft.
Miss. Pet. Co.'s No. 1 Solvent Inv. Co., NE cor. NE SW SW, Sec. 14-5-1w ....Drlg. 2,710 ft.
Miss.-Tex. Oil Co.'s No. 1 Negro Fair Assn., SW cor. NW SE, Sec. 28-6-1e ....S.D; 6⅝-in. parted 500 ft. off bottom; S.D; W.O. 2,479 ft.
Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e ....W.O; T.D. 2,905 ft; will drop from report.
Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e ....Derrick.
Universal Gas Co.'s No. 1 Sharbrough, SW cor. SE, Sec. 28-6-1e ....Began drlg. July 29; S.D; W.O. 88 ft.

HUMPHRIES COUNTY

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ....Set 12¼-in. 60 ft; S.D.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keys, C NW NE, Sec. 21-2-10 ....Rig up.

LAUDERDALE COUNTY

J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14 ...Derrick.

LAFAYETTE COUNTY

Banks-Good et al's No. 1 May, 113⅓ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w ....Derrick.

MADISON COUNTY

Barney Kennedy et al's No. 1 Raymond, 300 ft. E, 1,800 ft. N, SW cor., Sec. 32-7-2e ....Cmtd. 12⅛-in. 706 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ....Resumed operations Oct. 2; recovered lost bailer; S.D; W.O 3,007 ft.
Amory Pet. Co.'s No. 3 Carter, C SE SE, Sec. 7-13-17 ...Drlg. sand 1,230 ft.
Amory Pet. Co.'s No. 1 Harris, SW cor. SE SE, Sec. 18-13-17 ....Derrick.
Associated Oil Co.'s No. 1 School, SW cor. SW SE, Sec. 16-15-17 ....Began drlg. Aug. 26; S.D. 32 ft.

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Barrett Specification
PIPE LINE ENAMEL

(Neg. No. 192X) 22-inch Natural Gas Line protected with Barrett Specification Anti-Corrosion Products.

CORROSION PREVENTIVE
. . . assures long life to pipe lines .

THERE is a standard Barrett Specification Pipe Line Enamel made to resist destructive elements encountered in pipe line construction.

Toughness in a pipe line enamel is of maximum importance. It insures durability. In Barrett Specification Pipe Line Enamel toughness is secured by the use of a flake-type internal reinforcement—not a dust type or granular filler. This reinforcement permits the use of a higher percentage of coal-tar pitch (bitumen), the most successful waterproofing agent known. It is this greater quantity of coal tar pitch that makes Barrett Pipe Line Enamel a product of outstanding merit.

By the use of a flake-type internal reinforcement, the point of adequate flow is reached at lower temperatures. In application this reduces fumes to a minimum and saves fuel. Another important feature of the flake-type reinforcement is its high dielectric property. Made from a mineral admitted to be the finest electric insulator known, it combines with the insulating properties of coal-tar pitch to give sound protection against stray electric currents.

In addition this flake-type reinforcement is non-porous—which means that no capillary action can take place and no moisture penetrates to the metal. It is non-absorbent and chemically inert.

A copy of this folder describing Barrett Pipe Line Enamel will be sent you upon request. No obligation.

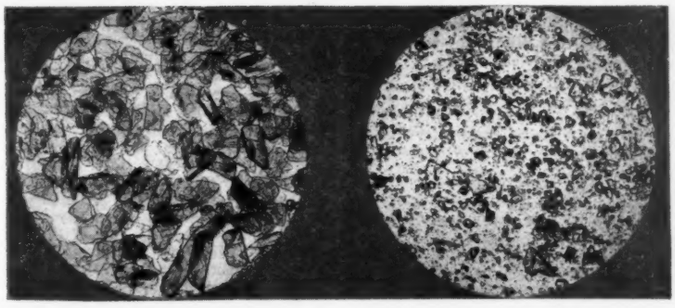
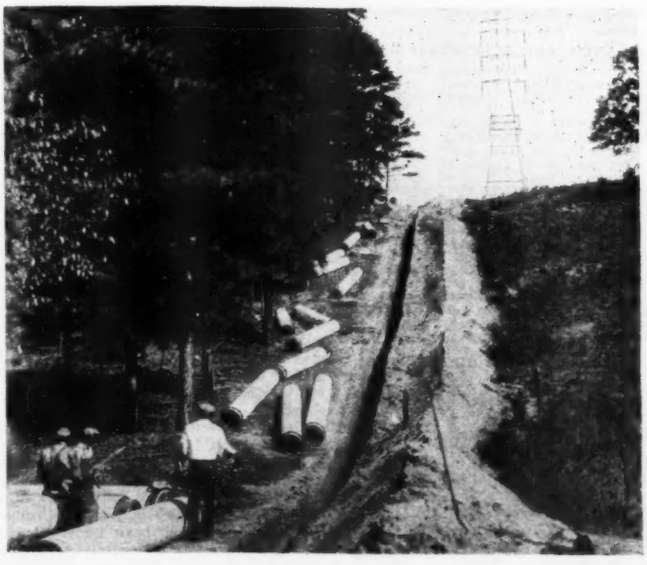


Photo-micrograph shows how flakes of internal reinforcement used by Barrett tend to interlock. They laminate with waterproofing agent and give Barrett Pipe Line Enamel unusual tensile strength and toughness.

And here is a photo-micrograph showing how ordinary filler, the granular or dust type, looks. It is composed of tiny smoothly-surfaced particles in loose contact.

(Neg. No. 89X) Barrett Pipe Line Primer and Barrett Pipe Line Enamel applied to protect pipe from nature's destructive elements.



With Barrett Specification Pipe Line Enamel goes Barrett Field Inspection and Quantity Surveys—backed by a waterproofing experience which has covered three generations and built the world-wide reputation of Barrett Specification Roofs, Tarvia and Barrett Underground Waterproofings. Bulletins on Barrett Products and Specifications will be mailed on request.

The Barrett Company
40 Rector St., New York, N. Y.

Will Drill Weed Patch Well Deeper

Efforts to Frame Curtailment Program at Playa Del Rey. New Tests in North Belridge Field and Kettleman Hills

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 20.—The most important development in California aside from the discovery of a new oil field in the Weed Patch area of Kern County, was the announcement of the Richfield Oil Co. that it will proceed forthwith to cancel all but a few of its crude oil purchase contracts in California and operate its refineries with crude oil produced by its own wells supplemented by a minimum amount of purchased oil. Notice of cancellation will be handed a number of producers on or before December 1 and additional cancellations will be subsequently effected from time to time. A 90-day clause in crude oil purchase contracts provides the Richfield with authorization for cancellation at the expiration of this time limit upon due notification. Notice of cancellation served on December 1 will become effective March 1, 1931, after which time no further receipts of crude oil will be accepted.

Practically all the major companies have been absorbing surplus production of crude oil in an effort to effect stabilization. If those companies which are already buying surplus crude in excess of refinery requirements in an attempt to stabilize conditions are unwilling to bear any further burden, some of the production relinquished by the Richfield Oil Co. will be dumped on the market for whatever it will bring. If this condition materializes its ultimate effect on crude and refined oil prices is too obvious to require comment.

The Shell Oil Co. has killed No. 1 Porter Day, which indicated the existence of a new oil field in the Weed Patch area of Kern County, preparatory to resuming operations which will result in the addition of a little more hole and the landing of an oil string. This well came in flowing 1,500 bbls. of 21.6 gravity oil and 300,000 feet of natural gas per day from 5,795 feet. As the 8⅝-inch water string was landed and cemented at 5,789 feet, the well was producing from only 6 feet of oil sand. It is possible No. 1 Porter Day will be recompleted within 15 days. Two other wells, No. 1 Porter of the Shell and No. 1 Wharton of the Mohawk, are already headed down to further determine the potentiality of this new field. The newly discovered Weed Patch Field is approximately 7 miles southeast of Bakersfield and about 25 miles northeast of the Wheeler Ridge Field, in the extreme southern part of the San Joaquin Basin. The oil is of a rather low grade, although it is superior to the 22 gravity crude found in the Fruitvale Field, which is approximately 6 miles northwest of Bakersfield.

October Production

During October, crude oil production in California amounted to 18,244,053 bbls., an average of 588,518 bbls. per day. This is a decline of 10,959 bbls. from the daily average production of September and is 279,068 bbls. under the daily average production chalked up in October of last year, when the State was producing 867,586 bbls. During October, 1930, total fluid stocks on the Pacific Coast declined 933,467 bbls., reducing the amount on hand at the close of the month to 179,500,485 bbls. Heavy crude, including refinery residuum, was reduced 1,659,385 bbls. but light refinable crude and gasoline stocks increased 453,428 bbls. and 286,224 bbls., respectively. Naphtha distillates were reduced 116,081 bbls., while all other fluid stocks increased 120,347 bbls. There were 82 new wells finished during the month, the aggregate initial daily output of which approximated 60,139 bbls. There were 437 strings of tools in operation and 9,523 wells producing. During the same period 115 new rigs were erected, 13 producing wells abandoned and 19 dusters abandoned.

Playa Del Rey

Approximately 75 per cent of operators in the Playa Del Rey Field have agreed to curtail production and a determined effort is being made to line up the balance. Completions in the field this week were a little less numerous than heretofore but this may be just a temporary lull as a check of drilling operations shows a number of other potential producers nearing the completion stage. The Treasure Oil Co. headed the list when its No. 1 Venice was brought in flowing 1,710 bbls. of 25.2 gravity oil and 1,800,000 feet of natural gas. This well, bottomed at an even 6,000 feet, was finished with an 8⅝-inch water string landed at 5,899 feet and a 6⅝-inch liner carrying 110 feet of perforated. The Barnsdall Oil Co., which is jointly developing the Burks lease with Cypress Petroleum Co., finished No. 9 flowing 690 bbls. of 24.2 gravity oil and 290,000 feet of natural gas. This well, completed in the Del Rey zone at 3,938 feet, was finished with an 11¾-inch water string set at 3,397 feet and a 6⅝-inch liner carrying 525 feet of perforated. The Jergins Trust failed to secure a natural flow in No. 1 Culver upon completion in the Del Rey zone at 4,605 feet and the well was put on the beam. It registered an initial daily production of 520 bbls., the oil testing 23.2 degrees. This well, with 8⅝-inch water string landed and cemented at 3,625 feet, was finished with a 6⅝-inch liner including 1,030 feet of perforated.

California Northern Corp. finished No. 4 Lindblade in the Del Rey zone at 4,506 feet but the initial daily output, 295 bbls., was disappointing as 4¾-inch liner carried 908 feet of perforations. Royal Oil Co. has just finished its No. 1 Del Rey in the upper zone at 4,229 feet and while a complete 24-hour gauge is not yet available it is flowing at the rate of 300 bbls. per day. Venice Oil Syndicate's No. 5 Venice is another well in the same class as this project, bottomed at 4,187 feet, is likewise producing at the rate of 300 bbls. Northern Investment Co. spent several days swabbing No. 5 Booth, completed at 4,534 feet, but the well failed to show sufficient kick to result in a natural flow. Preparations are being made to install pumping equipment.

Long Beach

There were only two wells put on production in the Long Beach Field, although two more are making production tests. Allied Petroleum Corp., although it failed to secure a natural flow in No. 3 Garrison, completed it on a compressor doing 555 bbls. of 25.3 gravity oil per day from 4,782 feet. This well, with 8⅝-inch water string landed and cemented at 4,320 feet, was finished with a 4¾-inch liner carrying 460 feet of perforated. Zenith Oil Co.'s No. 2 Signal, finished in the deep zone at 7,734 feet, was good for only 310 bbls. upon completion, due possibly to an unsuccessful water shutoff. It is probable this well will be worked over in an effort to reduce the water cut, which is 35 per cent of production. Phillip L. Bixby failed to secure commercial production in his No. 4 Cerritos, which was given a preliminary production test from the 6,400-foot level, and drilling has been resumed. This well, on the southeast flank of the Los Cerritos extension, is in what appears to be a promising looking oil sand at 6,698 feet. It is somewhat beyond present production.

Sunset Pacific Oil Co. recompleted No. 31 Marine in the Rosecrans Field of Los Angeles Basin and this well, plugged back from 7,516 feet to 5,435 feet, was returned to production flowing 992 bbls. of 36.6 gravity oil, cutting approximately 20 per cent. The Dominguez Field, which has been dormant for several years, has three drilling wells, one to be completed soon. The trio are No. 12 De Francis of the Associated and No. 3 Childs and No. 7 Manuel of the Shell Oil Co. George F. Getty Oil Co.'s No. 48 Springs, a deep test in the Santa Fe Springs Field has reached 8,925 feet. Considerable secrecy surrounds the drilling but the running of a 4¾-inch combination string indicates the possibility of an early test. This well is located favorably with respect to structure and should consequently prove a rather conclusive test in deep zone exploration.

According to Umpire Grimm's report for October, the O'Connell zone produced 883,090 bbls. of crude oil, compared with 806,277 bbls. from the Hathaway zone. Following these came the Meyer zone with a production of 523,260 bbls., Nordstrum with 320,088 bbls., Buckbee with 296,781 bbls., Bell with 57,090 bbls. and the Clarke with 38,602 bbls. The O'Connell zone, which topped the list from a production standpoint, did not head the list so far as the average daily well production is concerned. This zone shows an average daily well production of 339 bbls., compared with 469 bbls. for the Nordstrum zone. The Buckbee horizon ranked next with a daily average well production of 259 bbls., followed by the Clarke zone with 155 bbls., Hathaway with 133 bbls., Meyer with 121 bbls. and Bell with 88 bbls.

Elwood

The Barnsdall and Rio Grande successfully completed No. 7 Doty, a new well in the Elwood Field of Santa Barbara County, and although it failed to result in a natural flow it is flowing 495 bbls. of clean 34.2 gravity oil on gas lift. This well, extended the proven limits of the Elwood Field approximately 1,000 feet north. The relatively small production seems to indicate it is not far from the edge of the field although there is no evidence of edge water. The Pacific Western Oil Co. recompleted No. 7 on tideland permit No. 92 after an extended suspension and is flowing 6,000 bbls.

Associated Oil Co.'s No. 14 on the Ventura Land & Water Co. property, in the eastern part of the Ventura Avenue Field, registered an initial daily production of 3,115 bbls. of 29.9 gravity oil and 3,775,000 feet of natural gas. It was bottomed at 7,600 feet and is flowing under a pressure of 440 pounds on the tubing and 950 pounds on the casing. The Associated has two other wells under way on this lease and has a rig going up for another. Actual construction work has not yet been started on the Associated's projected 8-inch pipe line from the Ventura Avenue Field to tidewater but work is expected to get under way shortly. In the Rincon Field of Ventura County, N. C. Needham has concluded the rig foundation for No. 2, a tideland project on permit No. 55. In the extreme eastern part of the field, the Chanslor-Canfield Midway Oil Co. is being delayed with mechanical trouble in No. 2-A Hobson, a deep test at 7,521 feet.

Belridge

Several new wells are expected to get under way in the North Belridge Field of Kern County within a few weeks and if the Richfield Oil Co. succeeds in developing commercial production in its No. 1 Belridge in Section 22-27-20, additional drilling will be undertaken. This well looks favorable for production and the company has landed a string of 9-inch casing preparatory to an early production test. The Belridge Oil Co., which focused the attention of operators on this district by proving the existence of prolific Temblor production, has started work on its second well in Section 27-27-20, which will be an offset to No. 1 Martin of The Texas Company, which has just passed the 2,000-foot level. The deep zone discovery well of the Belridge Oil Co. has increased its daily production to 3,710 bbls. and a corresponding increase has taken place in the production of natural gas. The Union Oil Co. has staked location for a new well in Section 36-27-20, an offset to No. 12 McPhail of the Standard. The Continental Oil Co. is also making preparations to start new wells and it is expected at least one hole will be started on the Result lease very shortly.

George F. Getty Oil Co., which is drilling in Section 12-26-30 at Lost Hills on a sublease from the Lincoln Drilling Co., encountered a heavy head of hot salt water at 2,068 feet. This unexpected flow, estimated at 10,000 bbls. per day through a seven-eighths inch bean under a pressure of 430 pounds, necessitated a suspension of drilling pending the installation

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	997,250
Fuel oil	.....	.....	.....	.....	71,950	468,825
Diesel and gas oil	.....	.....	181,875	25,982	3,216,037	2,427,991
Gasoline	275,864	39,409	512,371	73,196	17,433,472	18,333,177
Kerosene	.....	.....	.....	.....	.....	49,750
Naphtha distillate	.....	.....	.....	.....	.....	81,760
Coastwise—						
Crude oil	270,511	38,644	300,000	42,857	14,035,556	23,550,084
Fuel oil	428,656	61,237	887,343	126,762	16,380,322	17,440,062
Diesel and gas oil	9,953	1,422	38,048	5,435	1,488,689	1,135,186
Gasoline	273,814	39,116	403,610	57,659	11,313,204	9,748,609
Kerosene	.....	.....	.....	.....	151,436	70,286
Exports—						
Crude oil	.....	.....	310,579	45,797	6,154,249	5,358,802
Fuel oil	286,569	40,938	321,188	45,887	15,601,721	16,551,252
Diesel and gas oil	38,804	5,543	33,157	4,736	3,938,634	2,363,216
Gasoline	153,032	21,862	141,491	20,213	14,087,172	10,918,078
Kerosene	.....	.....	59,540	8,506	3,145,249	2,904,789
Lubricants	18,050	2,579	.....	.....	45,484	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF PORTS

Diesel and gas oil	.....	.....	.....	.....	279,088	.....
Gasoline	.....	.....	.....	.....	1,080,671	2,131,183
Lubricants	.....	.....	.....	.....	27,796	138,706
Coastwise—						
Fuel oil	144,118	20,588	138,790	19,287	3,033,460	2,724,971
Diesel and gas oil	.....	.....	.....	.....	310,222	366,538
Gasoline	56,003	8,000	85,667	12,238	3,862,946	4,499,071
Kerosene	4,977	711	6,177	882	206,037	188,893
Exports—						
Crude oil	.....	.....	.....	.....	59,993	121,603
Fuel oil	.....	.....	.....	.....	866,296	841,631
Diesel and gas oil	.....	.....	.....	.....	457,589	393,132
Gasoline	74,720	10,674	.....	.....	3,645,846	4,985,677
Kerosene	.....	.....	.....	.....	570,271	528,060
Lubricants	.....	.....	.....	.....	33,579	29,795

of heavier equipment. The Universal Consolidated, a subsidiary of the Richfield Oil Co., is drilling in its No. 49 in Section 32-26-21 at 4,700 feet and progress from now on will be relatively slow due to the necessity of taking unusual precautions to cope with a high head flowing water around the 4,800-foot level.

Kettleman Hills

Two new wells started making hole in the Kettleman Hills Field and another, No. 1 Signal of the Richfield, is expected to be spudded in a few day. The latest wells to get under way in the North Dome are Standard's No. 34 in Section 29-21-17 and North American's No. 1 Blauvelt in Section 36-21-17. A week or so previously Associated spudded in No. 2 Whepley and Superior began making hole in No. 2 Huffman. No. 2 Felix of the Petroleum Securities encountered the top of the Temblor late last week at 6,825 feet and this well is rotating in the characteristic hard gray oil sand at 7,098 feet with the completion depth scheduled for approximately 7,800 feet. This well, barring mechanical trouble, will probably be the next completion listed at Kettleman Hills as Standard's No. 65 in Section 29-21-17 will probably be carried down another 1,000 feet, which will place the bottom of the hole at 8,300 feet.

The Chanslor-Canfield Midway Oil Co. successfully finished No. 2 Poso, a new well in the Round Mountain Field of Kern County and this project is pumping 335 bbls. of 17.2 gravity oil per day from 1,775 feet.

J. E. McCREADY DIES

Jason Emerick McCready, who brought the first string of tools into Muskogee County, Oklahoma, in 1902 and drilled the first well of the old Muskogee Pool where the Oklahoma free state fair grounds is now located, died Thursday in El Paso, Tex. He lived in Okmulgee until 1922, when he left to live in Long Beach, Calif.

PURE OIL CO. ANNOUNCES SEVEN NEW LOCATIONS IN MT. PLEASANT FIELD

By Paul A. Elliott

MUSKEGON, Mich., Nov. 24.—Announcement of seven new locations in two weeks to be drilled under permits issued by the state conservation department to the Pure Oil Co. indicates at least a temporary resumption of activities in the Mount Pleasant Field of central Michigan before winter weather sets in to hamper development work. All the locations will provide offsets for present producing wells completed and more thoroughly will block off certain portions of the Mount Pleasant Field which was opened in the spring of 1928 by the Pure Oil Co.

The four new locations for which permits have been granted to the Pure company are as follows: Iosco Land Co.'s No. 3-B, SE SW, Section 1-14n-3w, Chippewa Township, Isabella County; Fred Sias' No. 4, NE SW, Section 8-14n-2w, Greendale Township, Midland County; Ed. and Thomas Sawade's No. 2, N half SW SE, Section 2-14n-3w, Chippewa Township, and B. G. Davis' No. 4, SE SE, Section 2-14n-3w, also Chippewa Township.

Two other wells also will be drilled in the Mount Pleasant area. One is W. A. Robinson's No. 1 Noah J. Skinner, SW SE SW, Section 9-14n-2w, Greendale Township, Midland County, and the other is the Mellon-Pollock Oil Co. and others' No. 1 Charles Duruin and wife, NW SW NE, Section 22-16n-4w, Vernon Township, Isabella County.

One other new location is for the Barry Oil & Development Corp.'s No. 1 A. O. Kinne, N half NE, Section 11-3n-8w, west of the Howell Township, Livingston County, wells.

A dry hole and a small producer in the Leaton Pool were the only completions of the week in the Mount Pleasant area. Isbell & Sarver's No. 1 B. Keehbauch, NE NE NE, Section 30-15n-3w, Denver Township, Isabella County, made a 35-bbl. initial producer. Dundee limestone was topped at 3,629 feet and pay sands at 3,666-74 feet.

Gibson, Johnson & Borden's No. 1 W. W. Brophy, SW NW, Section 19-15n-3w. Denver Township, was dry and abandoned in the Dundee formation at a total depth of 3,710 feet. The limestone was topped at 3,636 feet and water was struck at 3,700 feet. The well will be plugged.

The only wildcat completion in the State this week was the Island Oil & Gas Co.'s No. 1 Krispen, Claim No. 4, 2n-16e, Clay Township, St. Clair County, in the St. Clair River. It was dry and will be abandoned.

Interest Centers on Three Tests

Although one small producing oil well in the Dundee formation was completed in the last week in the Muskegon oil field, greatest interest centers on three drilling deep test wells. Two of the so-called deep test wells have run 5-inch casing a few feet above the depth at which the operators hope to strike commercial gas production in the upper Monroe formation. A. S. Cochran's No. 2 Taggart well, SE SE, Section 5-10n-16w, Muskegon Township, was cased at 2,215 feet. The Republic Oil Co.'s No. 2 George S. Brand well, SE SE, Section 11-10n-17w, Laketon Township, near the other end of the proved field, reached the casing point at 2,270 feet. Both of these wells are reported to have found indications of gas in the Monroe and probably will be drilled in early this week.

The third well is the Muskegon Deep Well Syndicate's No. 5 Herman Heinz well, NE NE, Section 8-10n-16w, Muskegon Township, the first well in the proved field to be started down as a real deep test with a depth of 5,200 feet as its maximum goal if necessary. This well is drilling at about 2,800 feet and operators are hoping to strike gas in the Sylvania or Salina before reaching the Niagara, or Guelph limestone, believed to be at about 3,700 feet deep.

Two other wells are being carried at least to the Monroe formation at about 200 feet below their Dundee producing level. They are the Reed Oil Co.'s No. 2 Hill, NE SE, Section 8-10n-16w, and the Shoup Oil & Gas Co.'s No. 6 George H. Shoup, NW NW, Section 8-10n-16w, also Muskegon Township. They were drilling at 2,100 and 2,070 feet, respectively.

Reed Well Going to the Monroe

The Reed Oil Co.'s No. 6 A. Heinz, NW SE, Section 8-10n-16w, is being prepared to go down to the Monroe by pulling pipe from the Dundee at 2,040 feet deep.

The one completion of the week is the Middle-West Oil Co.'s No. 3 Moch heirs, SE NE, Section 7-10n-16w, Muskegon Township, on the Bear Creek Flats. Dundee was topped in this well at about

(Continued on Page 106)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status—
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	6,730	hd. sd. drilling
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,570	suspended
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	4,740	sd. sh. drilling
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	5,400	sd. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	1,600	gr. sd. drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	2,960	br. sh. drilling
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	3,491	sd. sh. drilling
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	4,530	fishing
Johnson, George, No. 1 Goleta, Santa Barbara Co.	X- 4-28	4,065	hd. sd. drilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	7,518	recemented
Rio Grande, No. 1 Lankershim, Ventura Co.	13- 4-19	1,820	suspended
Associated, No. 1 Rincon, Creek, Ventura Co.	19- 4-24	2,080	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,360	cleaning out
California Republic, No. 1 Sespe, Ventura Co.	23- 4-21	rig	suspended
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	2,770	sd. sh. drilling
Lockwood Valley Oil Co., well No. 1, Ventura Co.	32- 8-21	225	hd. sd. drilling
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	5,215	sd. sh. drilling
Superior Oil Co., No. 1 Buttonwillow, Kern Co.	32-29-25	rig	rigging up
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	4,276	sd. sh. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	3,430	sd. sh. drilling
The Texas Co., No. 1 Belridge, Kern Co.	22-27-20	1,060	sd. sh. drilling
Richfield, No. 1 Belridge, Kern Co.	20-27-20	5,804	reaming
Standard, No. 1 Belridge, Kern Co.	31-27-20	112	sd. drilling
Ohio Oil Co., No. 1 Belridge, Kern Co.	36-27-20	1,012	cemented
Union, No. 17 Belridge, Kern Co.	36-27-20	....	location
Union, No. 1 South Belridge, Kern Co.	27-28-20	....	location
Rio Grande, No. 1 Belridge, Kern Co.	18-28-22	3,680	suspended
Reward Oil Co., No. 1 Belridge, Kern Co.	34-27-20	1,000	sd. sh. drilling
Shell, No. 3 Belridge, Kern Co.	24-28-20	940	suspended
Shell, No. 4 Belridge, Kern Co.	14-28-20	1,098	core hole
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	3,864	sd. sh. drilling
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,795	1,500 bbls.
Shell No. 2 Weed Patch, Kern Co.	29-30-29	2,865	sd. sh. drilling
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	3,688	sd. sh. drilling
Pet. Sec., No. 1 Edison, Kern Co.	14-29-29	3,580	redrilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	suspended
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,293	sd. sh. drilling
Shell, No. 1 Semitropic, Kern Co.	17-27-23	7,915	hd. sd. drilling
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	714	hd. sd. drilling
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,560	suspended
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	1,190	suspended
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	4,290	br. sh. drilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	4,894	cleaning out
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	2,711	sd. sh. drilling
Carruthers Oil Co., No. 1 Fresno, Fresno Oil Co.	4-17-20	rig	suspended
Miracle Oil Co., No. 1 Cuyama, San Luis Obispo Co.	17-10-25	mtl.	building rig
Panorama Oil Co., well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	suspended
Paso Robles Snyd., No. 1 Creston, San Luis Obispo Co.	21-27-11	3,941	suspended
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	1,653	sd. sh. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	880	cleaning out
Pismo Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,010	suspended
Shockley, C., No. 1 Pismo, San Luis Obispo Co.	13-32-13	698	hd. sd. drilling
Standard, No. 1 King City, Monterey Co.	23-22- 7	5,740	cleaning out
Brown, F. A., No. 1 Parkfield, Monterey Co.	15-23-14	816	suspended
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Murphy Oil Co., No. 1 Dudley Ridge, Kings Co.	20-23-20	1,461	sd. sh. drilling
Kettleman Lakeview, No. 1 Tulare Lake, Kings Co.	11-23-19	1,050	suspended
Purman, T. H., No. 1 Reef Ridge, Kings Co.	36-23-17	rig	rigging up
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	5,094	sd. sh. drilling
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	372	hd. sd. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,495	suspended
Campbell Oil Co., No. 1 Porterville, Tulare Co.	22-22-27	857	suspended
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	918	suspended
Western Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	1,022	suspended
Mills & Wilson, No. 1 Porterville, Tulare Co.	35-22-27	913	suspended
Jennings Synd., No. 1 Porterville, Tulare Co.	8-23-28	510	suspended
Terra Bella Drlg. Co., No. 2 Porterville, Tulare Co.	34-22-27	920	cleaning out
Jaques Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	914	suspended
Hallock, William, No. 1 Porterville, Tulare Co.	34-22-27	1,090	suspended
Kern Pet. Co., No. 1 Porterville, Tulare Co.	34-22-27	1,184	suspended
Miller & Sylvan, No. 1 Porterville, Tulare Co.	11-23-27	1,030	suspended
Larson Oil Co., No. 1 Porterville, Tulare Co.	11-23-27	1,160	suspended
Larson Oil Co., No. 2 Porterville, Tulare Co.	11-23-27	124	abandoned
Kettleman Trust, No. 1 Porterville, Tulare Co.	21-22-27	940	sd. sh. drilling
Lewis, Paul M., No. 1 Porterville, Tulare Co.	15-22-27	1,118	testing
Turk & Campbell, No. 1 Porterville, Tulare Co.	34-22-27	1,352	suspended
Roetner Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	1,480	sd. sh. drilling
Wells & Armstrong, No. 1 Porterville, Tulare Co.	10-22-27	210	suspended
Enterprise Oil Co., No. 1 Porterville, Tulare Co.	29-23-28	665	hd. sd. drilling
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	34-17-24	2,060	reaming
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	761	hd. sd. drilling
Getty Oil Co., No. 1 Nigger Heaven, Yolo Co.	23-12- 3	2,050	suspended

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Union, No. 1 Orchardale, Los Angeles Co.	10- 3-11	5,950	sd. sh. drilling
Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14- 2-15	4,698	sd. sh. drilling
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	rig	rigging up
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	cleaning out
Francis, Don, No. 1 Compton, Los Angeles Co.	8- 3-13	572	suspended
Central Oil Co., No. 1 Compton, Los Angeles Co.	28- 3-13	5,094	suspended
Combs, E., No. 1 Compton, Los Angeles Co.	16- 3-13	692	abandoned
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	suspended
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	3,160	sd. sh. drilling
Cal. Ventura Oil Co., No. 3 Hermosa, Los Angeles Co.	31- 3-14	....	material
Westwood Pet., No. 1 Hermosa, Los Angeles Co.	6- 4-14	rig	suspended
Wood, C. L., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	....	location
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
McKeon Drlg. Co., No. 1 Watts, Los Angeles Co.	1- 3-14	500	cemented
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	6,295	suspended
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	5,650	hd. sd. drilling
San-Van Oil Co., No. 1 Van Nuys, Los Angeles Co.	14- 1-16	rig	rigging up
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	3,726	35 bbls.
Rucker & Smith, No. 2 Puente, Los Angeles Co.	27- 2-10	rig	rigging up
Bardeen Pet., No. 2 Puente, Los Angeles Co.	2- 2-10	318	sd. drilling
Vega Pet. Corp., No. 1 Puente, Los Angeles Co.	14- 2-10	.....	grading
Bidart Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	3,325	suspended
D. & B. Oil Co., No. 1 Puente, Los Angeles Co.	3- 2-10	4,620	recemented
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	1,092	resume work
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	gas—shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	rig	portable equip
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	25- 1-12	5,278	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	2,280	suspended
Olympic Corp., No. 1 Calabas, Los Angeles Co.	18- 1-17	5,695	fishing
Union, No. 1 Cyote, Sansinena, Los Angeles Co.	30- 2-10	5,200	suspended
Graham & Loftus, No. 1 Coyote, Orange Co.	18- 3- 9	6,733	suspended
Nesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	2,848	hd. sd. drilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	1,010	suspended
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., No. 1 Brawley, Imperial Co.	36-11-10	3,240	suspended
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,265	suspended
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	4,172	gr. sd. drilling
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	4,840	hd. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,892	suspended
San-Col Oil Co., No. 1 Colton, San Bernardino Co.	18- 1- 4	101	sd. drilling
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2- 8	1,549	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	854	redrilling

Seven Wells Drilling in Eunice Area

Hobbs District Allowable Cut. Six Wells Completed, One Extending Pool Third of a Mile. Pilot Butte Well Bigger

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Nov. 24.—The allowable production of the Hobbs Pool for the last half of November was cut to 29,667 bbls. daily from 31,300 bbls. for the first half. Six wells were completed, one of which, Tidal Oil Co.'s No. 3 Hardin, extended the pool one-third of a mile to the north and another, Skelly Oil Co.'s No. 2 Fowler, extended it the same distance southwest. The potential production of the pool on November 16, as established by the proration committee, was 973,183 bbls. daily, an increase of 71,928 bbls. over November 1. Eight units, or 320 acres, were added to the productive area during the first half of the month. The Eunice area is now the second most active drilling district in Lea County with seven wells drilling. The Getty Oil Co.'s No. 1 State averaged 450 bbls. daily the past week.

A Pennsylvanian test on the Ashley Creek structure in eastern Utah may be drilled by the Standard Oil Co. of California next spring. A new operation northwest of Salt Lake City is reported.

A number of Colorado wells are shutting down for the winter. The discovery well on the Greasewood Dome in Weld County may not be deepened into the sand for some time. One dry hole and a 40-bbl. completion were reported in the South Florence Pool and the South Park Oil Co.'s wildcat in Park County reports an oil show. The Texas Production Co. completed a 109-bbl. well in the Sundance on the Moffat Dome.

The Wyoming-Montana Pipe Line Co.'s projected oil carrier from the Big Horn Basin fields to Montana will be held up until spring. The Kinney-Coastal Oil Co.'s deep test on Pilot Butte in Fremont County blew in bigger than when originally drilled when plugged back and is estimated making 65,000,000 feet of gas. Wyoming wildcats are shutting down for the winter.

NEW MEXICO

Hobbs Pool—Lea County

Two wells completed this week extended the productive area on the north and on the southwestern sides of the pool. The Tidal Oil Co.'s No. 3 Hardin, SW NW NE Section 19-18-38, the most northerly producer in the field, was completed at a total depth of 4,222 feet and extended the pool one-third of a mile to the north. It is 1¼ miles south of the Landreth Production Co.'s No. 1 State, SW cor. SE Section 7-18-38, which limits the pool in that direction, and one-third of a mile north of the Tidal's No. 1 Hardin, the nearest producer on the south. The new well found the pay at 4,090-4,222 feet and was given a potential of 9,720 bbls. of oil and 7,750,000 feet of gas. It topped the anhydrite at 1,565 feet and had the first gas at 2,840 feet. The elevation is 3,664 feet.

The other well which extended the proven area was the Skelly Oil Co.'s No. 2 Fowler, SE cor. NW Section 31-18-38, a little less than one-half of a mile south of the same company's No. 1 Fowler in the NE cor. NW Section 31, the nearest producer on the north, and three-fourths of a mile northwest of the Shell Petroleum Corp.'s No. 1 Berry, SE cor. Section 31, the nearest producer in that direction. The Skelly well topped the pay at 4,055 feet and was drilled to 4,215 feet. The 3-inch tubing is at 4,150 feet. It was given a potential of 3,758 bbls. It made 74 bbls. the first 30 minutes. The elevation of this well is 3,646 feet. The Empire Gas & Fuel, Shell Petroleum and Vacuum Oil companies are drilling offsets.

Hobbs High, Inc.'s No. 1 Tatum, NW SW SW Section 35-18-38, which limits the pool on the southeastern side, was abandoned at a total depth of 4,356 feet. Elevation is 3,609 feet. It topped anhydrite at 1,765 feet, and salt at 1,850 feet. Salt was bottomed at 2,605 feet and top of brown lime was at 3,075 feet. It had a show of gas at 3,087-3,105 feet; 400 feet of salt water at 3,650 feet; oil shows at 3,965-75 and 4,310-12 feet, and 800 feet of sulphur water at 4,365 feet. The location is just to the east of the Hobbs townsite.

Other Completions

Other completions include the following:

Tidal Oil Co.'s No. 2 Hardin, SW SE NE Section 19-18-38, was given a potential of 10,595 bbls. of oil and 8,500,000 feet of gas from pay at 4,130-4,240 feet. The 3-inch was run to 4,185 feet.

Texas Pacific Coal & Oil Co.'s No. 2-G State, NE cor. SE Section 24-18-37, after being delayed several weeks with trouble with 3-inch tubing at 4,208 feet, cleaned up this job and was drilled to 4,218 feet. Top of pay was at 4,190 feet. It made 720 bbls. open flow in three hours and was given a potential of 2,981 bbls. It is on a line with five other producers running in a north-south direction on the northwestern side and is an offset to Humble's No. 1-A State, Amerada's No. 4 McKinley and Ohio Oil Co.'s No. 3 State.

Amerada Petroleum Corp.'s No. 4-B State, NE cor. NW Section 29-18-38, reported last week shut in for proration test, was given a potential of 25,175 bbls. of oil and 15,000,000 feet of gas. Pay was at 4,030-4,214 feet and it is the second largest well in the field.

Shell Petroleum Corp.'s No. 8 McKinley, C N half N half SE Section 19-18-38, found pay at 4,075-4,210 feet and was rated at 12,960 bbls. of oil and 8,309,000 feet of gas. The 3-inch is at 4,189 feet.

Drilling Operations

Routine operations include the following:

Continental Oil Co.'s No. 1-C State, C NW SE Section 5-19-38, cemented 9⅝-inch at 2,780 feet and is drilling out plug.

Empire Gas & Fuel Co.'s No. 3 Hardin, SE NE NW Section 19-18-38, cemented 7-inch at 3,983 feet, and its No. 3 Fowler, SW cor. NE Section 31-18-38, is bottomed at 4,212 feet with 3-inch at 4,198 feet and is cleaning out to test.

Humble Oil & Refining Co.'s No. 2-A State, SE cor. Section 25-18-37, is drilling at 4,054 feet in lime, and its No. 3-A State, C NW SE Section 25-18-37, cemented 9⅝-inch at 2,823 feet in anhydrite.

Landreth Production Co.'s No. 1-C State, NE cor. NW Section 6-19-38, joint with Maljamar Oil & Gas Co., spudded November 8, and is running 15½-inch at 202 feet in red beds.

Mid-Continent Oil Co.'s No. 1 Fowler, NE NW NW Section 31-18-38, is running 7-inch at a total depth of 3,964 feet.

Midwest Refining Co.'s No. 26 State, C SE SW, Section 4-19-38, cemented 8⅝-inch at 3,985 feet, and its No. 11 Thorpe, C NE NW, Section 10-19-38, is drilling at 225 feet in the red beds with 15½-inch at 191 feet. Same company's No. 11 State, C NE NW, Section 9-19-38, is drilling at 1,303 feet in red beds, and its No. 26 McKinley, C SE NW, Section 5-19-38, cemented 9⅝-inch at 2,771 feet. The last named topped salt at 1,656 feet and bottomed it at 2,650 feet. Midwest's No. 29 Turner, C SW SW, Section 34-18-38, cemented 10¾-inch at 2,451 feet.

National Securities Oil Co.'s No. 1 Linam, NE SE SW, Section 33-18-37, is drilling at 1,487 feet in red beds and shells and had water at 1,170-85 feet.

Ohio Oil Co.'s No. 4 State, SW cor. Section 30-18-38, is bottomed at 3,950 feet in lime and running 7-inch.

Shell Petroleum Corp.'s No. 2 Berry, NW cor. SE, Section 31-18-38, topped pay at 4,040 feet and was drilled to 4,210 feet and is running tubing.

Sun Oil Co.'s No. 4 McKinley, C SW NE, Section 5-19-38, is drilling at 1,490 feet in anhydrite. It topped anhydrite at 1,485 feet.

The Texas Company's No. 3-C State, C SW NE, Section 25-18-37, is drilling at 2,920 feet in anhydrite and lime. It topped salt at 1,628 feet and 9⅝-inch is at 2,750 feet.

Tidal Oil Co.'s No. 4 Grimes, SE cor. NE, Section 29-18-38, is drilling at 4,070 feet in lime with 7-inch cemented at 3,880 feet, and its No. 5 Grimes, NW SE NE, Section 29-18-38, is rigging up.

Vacuum Oil Co.'s No. 1 Berry, NE cor. SW, Section 31-18-38, is drilling at 4,152 feet in gray lime. The 7-inch was cemented at 3,955 feet.

Eunice Area—Lea County

An application for a lease on state land to establish a townsite at Eunice in the belief that this area will develop an important oil field was made to the state land commissioner, but no lease has yet been granted, it is reported. This area is now second only to Hobbs in drilling activity.

Getty Oil Co.'s No. 1 State, NE cor., Section 19-21-36, which is being put on production, is bottomed at 4,000 feet and preparing to shoot. It has averaged 450 bbls. of oil and 2,000,000 feet of gas the past seven days. Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, was plugged back from 3,900 feet to 3,878 feet and is cleaning out to run tubing. Shell Petroleum Corp.'s No. 1 Coleman, NW cor. SE, Section 17-21-36, is drilling at 2,565 feet in anhydrite and salt. It topped salt at 1,382 feet and elevation is 3,642 feet. It is an offset on the south to Tidal Oil Co.'s No. 1 Coleman. Continental Oil Co.'s No. 1-A Lockhart, NE cor., Section 18-21-36, is building rig, and its No. 2 A. E. Meyers, SE cor. NW, Section 17-21-36, is bottomed at 324 feet and waiting on casing. Atlantic Oil Producing Co.'s No. 1 Coleman, SW NE NW, Section 17-21-36, is digging cellar, and Continental Oil Co.'s No. 1 William Meyers, SW cor. NW, Section 28-22-36, is drilling at 4,173 feet in gray lime.

Caprock Area—Lea County

Western Drilling & Engineering Co.'s No. 1 Bridges, SE cor. NW, Section 17-17-34, is drilling at 2,745 feet. It topped salt at 1,750 feet and bottomed it at 2,675 feet.

Lovington Area—Lea County

Galt, Brown and others' No. 1 State, SW NW NW, Section 9-15-35, is drilling at 2,140 feet in salt. Top of salt was at 2,035 feet. Elevation is 4,019 feet.

Eddy County

Lockhart & Co.'s No. 1 Livingston, C SW SW, Section 23-24-28, Pearce Canon district, is drilling at 1,625 feet in anhydrite. It had two bailers of water per hour at 1,495-1,505 feet. The 10-inch was cemented at 1,324 feet. Elevation is 2,915 feet. Getty Oil Co.'s No. 6 Dooley, C NW SW, Section 24-20-29.

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TURNER VALLEY FIELD PRODUCTION PASSES MILLION-BARREL YEAR MARK

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Nov. 22.—With October deliveries reaching a new peak of 144,022 bbls., the Turner Valley Field has for the first time passed the production figure of 1,000,000 bbls. in a single year. Production for the 10 months ending October 31 aggregated 1,019,683 bbls., while the total production for the 12 months of 1929 reached only 951,645 bbls. The daily average increased from 2,870 bbls. in January to 4,646 bbls. in October. The 1930 deliveries were as follows:

Month—	Total production	Daily average
January	88,975	2,870
February	78,319	2,797
March	105,835	3,414
April	87,278	2,909
May	84,046	2,711
June	111,960	3,732
July	95,884	3,093
August	110,801	3,576
September	112,563	3,752
October	144,022	4,646

While the marked increase in October was largely due to new production, a portion of the gradual gain in the latter part of 1930 has been due to improved methods. Numerous engineering difficulties, chiefly in connection with the freezing of the larger producers, have been encountered in the Turner Valley Field; and Imperial Oil, Ltd., in particular has been active in experimenting with new methods of solving these problems. The handling of the wet gas flow to and in the separators has been one phase of the problem, and experiments have been made with a wide variety of adjustments, with a view to securing the maximum of crude naphtha recovery with the minimum of interruption. Experiments along this line will be continued, not merely by Imperial Oil, Ltd., but by various independent companies. East Crest Oil Co. seems to have been unusually successful with its handling of its No. 2-A producer, and Calmont Oils, Ltd., has apparently solved its freezing problem, though this involved the drastic restricting of the flow by heavy back pressure.

Good results have also, in most instances, followed the practice, first generally introduced by Imperial Oil, Ltd., of shooting wells which showed only a small initial production from the lime. Most wells thus treated have materially increased their production, and several are now among the larger producers. Shooting in the deep lime in most cases does not produce immediate results, weeks and even months being required for a hole to full clear itself of lime fragments.

Imperial Drilling

Among the Imperial tests in the Turner Valley, the latest official report shows six drilling and two standing cemented. Southwestern Petroleums' No. 2, Section 8-19-2w5, recently spudded in as a southwesterly offset to East Crest's No. 2-A, cemented casing at 266 feet. Royalite's No. 24, LSD 3, Section 29-19-2w5, standing cemented in the top of the lime at 5,267 feet, will test an important new potential extension of the South Turner Valley producing area, or, rather, a connecting link between the Home area to

(Continued on Page 106)

Andrews Well Shot; Makes 235 Barrels

Eastern Howard Semiwildcat Looks Better After Third Shot. Progress of Tubing Program at Big Lake Wells

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 24.—Fuhrman Petroleum Co.'s No. 1 Ford in Section 16, Block A-43, Andrews County, again attracted considerable attention during the week when it was twice shot, the first a 150-quart shot from 4,384-4,534 feet and the second a 200-quart shot from 4,287-4,474 feet. After the first shot it cleaned itself and flowed 232 bbls. of 24 gravity oil the first 24 hours, and after the second shot it flowed 235 bbls. the first 24 hours and 233 bbls. the next 24 hours. It is now being cleaned out, and when thoroughly cleaned may make higher gauges than immediately after the shots, but a 230-bbl. well of 24 gravity oil will have to produce indefinitely to make drilling profitable in this area, and such a small well at a total depth of 4,614 feet is not likely to arouse much renewed enthusiasm in the area where drilling is an expensive proposition due to long hauls of material, lack of water for drilling, and tough lime formations.

Eastern Howard Test

Green Petroleum Co. and Getty Petroleum Co.'s No. 1 Denman in Section 14, Block 30, Township 1-S, T.&P. Survey, eastern Howard County, in semiwildcat territory, was given its third shot during the week. One hundred quarts was shot from 2,660-2,710 feet and the well put 100 bbls. of oil in the tank in nine hours following the shot. The first shot was with 60 quarts from 2,790-2,816 feet, making the well look good for about 60 bbls. per day on pump. The first pay was logged from 2,615-30 feet with increases being encountered at 2,662, 2,703 and 2,775 feet. The last shot was 80 quarts from 2,600-40 feet and it is now being cleaned out to run tubing. The well looks much better than it has heretofore and will probably be completed when tubing is run at the present total depth of 2,818 feet.

Magnolia Petroleum Co.'s No. 3 Scarborough in Section 1, Block 77, a three-quarter-mile southwest extension to the Scarborough Pool, is temporarily completed at 2,876 feet and is flowing around 80 bbls. per day.

Daily average runs and shipments from West Texas during October were 315,892 bbls., receipts 12,174,095 bbls., deliveries 12,788,619 bbls., stocks 33,587,352 bbls., room 21,403,648 bbls., and capacity 54,991,000 bbls.

Pipe line runs were 985,412 bbls. over September's mark which was 11,164,704 bbls. October's total was 12,150,116 bbls.

Total crude oil shipped in tank cars during October were 32,712 bbls. over September's shipments which were 605,791 bbls.

Big Lake Tubing

The Railroad Commission has not yet granted an extension of time for the tubing of the seven deep producers in the Big Lake Field, Reagan County. The Big Lake Oil Co. has completed tubing its No. 2-C University, but the engineers and attorneys of the Big Lake Oil Co. and Group No. 1 Oil Corp. (Continental Oil Co.) stated before the commission that tubing these wells was a dangerous and difficult job which could not be rushed although five of the wells are being prepared to be tubed, one of them already tubed and the other, Group No. 1 Oil Corp.'s No. 1-B University offering the greatest danger and biggest job of all for its tubing and valves have been greatly damaged by sand and rocks heaved up the hole by great pressure. It will probably have to be killed with mud before tubing work is commenced on it.

As the time has already expired the Railroad Commission will no doubt issue an order giving the companies an extension, but tubing work will be expected to be rushed to stop the waste of gas which caused members of the Railroad Commission to hold out against an extension of time.

Big Lake Oil Co.'s No. 2-C University produced only 1,446 bbls. of oil after tubing was run, cutting down daily production by about 500 bbls. It has been making between 1,900 and 2,000 bbls. per day.

Daily average of the four deep wells of the Big Lake Oil Co. in the Reagan County Field were as follows for the week: No. 1-C University, 1,458 bbls.; No. 2-C 1,802 bbls.; No. 3-C, 178 bbls.; No. 4-C, 4,145 bbls. Group No. 1 Oil Corp.'s wells averaged as follows: No. 1-B, 2,865 bbls., with 23,239,714 feet of gas; No. 2-B averaged 2,070 bbls. of oil with 26,443,272 feet of gas; and No. 3-B averaged 1,757 bbls. with 17,802,285 feet of gas.

New Nominations

New nominations by purchasing companies operating in the West Texas district have been set at 251,377 bbls., being approximately 32,200 bbls. per day below production as of November 1, 1930. Revised nominations for the West Texas district follow:

	Bbls. daily
Atlantic Oil Producing Co.	14,000
Burford Oil Co.	4,500
Coltex Refining Co.	7,500
Deer Oil Corp.	500
Gulf Pipe Line Co.	32,282
Humble Oil & Refining Co.	60,000
Magnolia Petroleum Co.	2,500
Panhandle and Santa Fe R. R.	60
Pasotex Pipe Line Co.	8,000
Rio Grande Oil Co.	2,000
Shell Petroleum Corp.	26,900
Southern Pipe Line Co.	19,000
The Texas Company	5,965
Tidal Refining Co.	5,000
Illinois Pipe Line Co.	36,500
Others	15,690
Total	251,377

COMPLETIONS IN WEST TEXAS

Howard County

Sinclair Oil & Gas Co.'s No. 1 G. D. Montgomery, first pay 2,452-64 feet, shot 230 quarts 2,452-2,570 feet, second pay 2,640-42 feet, shot 300 quarts 2,648-98 feet, initial production 209 bbls., total depth 2,798 feet.

Irion County

G. Cromwell and others' No. 3 J. M. Nutt, total depth 1,735 feet, plugged back to 1,458 feet, oil sand 1,444-56 feet, initial production 10 bbls., drilled deeper from completed well of July 14, 1930.

Loving County

Arkansas Fuel Oil Co.'s No. 1 W. W. Dean, total depth 4,341 feet, plugged back to 4,339 feet, top pay 4,302-34 feet, shot 160 quarts 4,297-4,338 feet, initial production 312 bbls. in 22 hours after shot.

Mitchell County

Gibson and Johnson's No. 3 W. T. Scott and others, temporarily abandoned, total depth 1,300 feet.

Pecos County

Cardinal Oil Co.'s No. 2 J. H. Tippett, top pay 387 feet, initial production 25 bbls., total depth 395 feet.

Tom Green County

Pratt and Hancock's No. 1 G. W. Lewis, dry and abandoned, total depth 325 feet.

Upton County

Eppenauer Drilling Co.'s No. 1 W. A. Chaney, total depth 2,447 feet, plugged back to 2,425 feet, top pay 2,325 feet, initial production 50 bbls. per day.

Ector County

The Texas Company and others' No. 9 W. E. Connell, show oil and gas 3,475-3,530 feet, top pay 3,535-40 feet, shot 160 quarts 3,515-3,573 feet, initial production 314 bbls. flowing, total depth 3,622 feet.

Sutton County

Independent Oil & Gas Co.'s No. 1 Wilson, temporarily abandoned.

Ward County

Gulf Production Co.'s No. 4 Hutchings, top pay 2,477 feet, initial production 60 bbls. oil and 15,000,000 feet of gas, total depth 3,102 feet.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended November 24

Company, well, farm name, section and block—	Remarks—
ANDREWS COUNTY	
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,300 ft. from W of Sec. 16, Blk. A-43, Public School Land	Plugged back to 4,564 ft.; shot with 150 qts.; flowed 232 bbls. in 24 hrs.; flowing by heads; total depth 4,613 feet.
Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor. Sec. 24, School Blk. A-46	Building rig.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Shut down 2,510 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles S of Alpine	Shut down 1,750 ft.
CONCHO COUNTY	
Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120 ft.	Spudded and shut down.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock	Shut down 1,520 ft.
CRANE COUNTY	
Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 3, Blk. B-27, Public School Land	Fishing for tools 4,488 ft.; estimated making 7,000,000 ft. of gas and spraying 25 bbls. oil per day.
Cranfill Bros.' No. 1 Muir, 330 ft. from N and 2,310 ft. from W, Sec. 23, Blk. B-37, Public School Land	Shut down 3,770 ft.
CROCKETT COUNTY	
Dieringer et al's No. 1 Banscorew estate, 330 ft. from N and 2,310 ft. from W of Sec. 27, Blk. HH, G.C.&S.F. Sur.	Shut down 75 ft.
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.
Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur.	Swabbing and bailing 6 bbls. oil per day; total depth 2,056 ft.
Taylor-Link Oil Co.'s No. 1 Mary Bullock et al, 330 ft. from N and E of Sec. 41, T.C. Sur.	Drlg. 745 ft.
CULBERSON COUNTY	
Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E, Sec. 20, Blk. 89, Public School Land	Shut down 1,520 ft.; show oil 1,400-15 ft.
Kornrumpt et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land	Drlg. 1,050 ft.
DAWSON COUNTY	
Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur.	Moving in tools.
ECTOR COUNTY	
C. P. Davis et al's No. 1 Hendricks, C SW Sec. 46, Blk. 42, Twp. 2s, T.&P. Sur.	Shut down 4,850 ft.
H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur.	Fishing 3,250 ft.

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WEST TEXAS PRODUCTION

Week ending November 22

County—	Wells	Bbls.
Andrews	2	109
Crane	370	28,335
Crockett	49	1,690
Ector	74	4,900
Fisher	8	1,752
Garza	1	26
Howard-Glasscock	530	27,968
Irion	7	89
Jones	73	1,419
Loving	32	3,755
Mitchell	148	2,140
Pecos	512	102,825
Reagan	253	26,244
Runnels	3	10
Scurry	5	9
Taylor	3	128
Upton	252	7,545
Ward	45	3,660
Winkler	593	57,015
Total production this week		268,619
Total production last week		276,048
Decrease		7,429

RUNS THROUGH TRUNK LINES

Company, size and location—	Bbls.
Atlantic, 10-inch, Houston	25,344
Gulf, 10-inch, Ranger	54,629
Humble, two 8-inch, San Angelo	19,380
Humble, ten 12-inch, Station A	47,992
Illinois, two 8-inch, Del Rio	26,620
Magnolia, 8-inch, De Leon	24,836
Pasotex, 8-inch, El Paso	9,514
Shell, 10-inch, Healdton	27,816
Shell, 10-inch, Houston	28,773
Texas, 12-inch, Houston	31,300
Total	276,564

RUNS TO WEST TEXAS REFINERIES

Amarillo Ref. Co., Pyote	None
Big Spring Ref. Co., Big Spring	1,262
Burford Ref. Co., Pecos	2,489
Bluebonnett Ref. Co., Wickett	None
Cosden Ref. Co., Big Spring	10,449
Col-Tex Ref. Co., Colorado	7,000
Great Western Ref. Co., Big Spring	2,795
Humble Oil & Ref. Co., McCamey	5,042
Richardson Ref. Co., Big Spring	None
Tonkawa Ref. Co., Pyote	1,000
Wickett Ref. Co., Wickett	150
Total	33,168

TANK CAR SHIPMENTS

Texas Pacific Coal & Oil Co. from Hurdle	1,542
Fox & Thorsen from Mertzon	None
Thomas-Brann from Grant City	None
Reagan County Pur. Co. from Texon	None
Orient from Hurdle	55
Southern Crude from Wickett	18,473
Total	20,070
Total daily average distribution	329,392
Total daily average production (including Lea County, New Mexico)	306,396
Daily average from storage	22,496

Dry Hole Limits Taconian Area to East

Fourteen Drilling Wells in the Sullivan Ranch District, Western Gray County, Several Nearing Completion

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 24.—In the Taconian area of western Gray County where Cree-Hoover and others opened up a granite wash pool on the Sullivan ranch the Empire Gas & Fuel Co. seems to have found a dry hole offsetting the discovery to the east in Section 136, thereby limiting the area in that direction and cutting down its possibilities as a major pool. There are 14 drilling wells in the area, several of them due for completion within a few days. This area is not to be put under separate proration as formerly suggested. It has no need for any proration at the present time.

New Nominations

New nominations by the various purchasing companies operating in the Panhandle district are as follows:

	Bbls.
Bell Oil & Gas Co. (Gray County)	3,800
Continental Oil Co. (Carson and Hutchinson Counties)	2,500
Dale Oil & Refining Co. (Gray)	1,750
Gulf Pipe Line Co.	6,700
Humble Oil & Refining Co.	10,000
Magnolia Petroleum Co.	4,400
Prairie Oil & Gas Co.	*4,000
The Texas Company	10,000
The Toronto Pipe Line Co.	3,000
Champlin Refining Co.	166
Cockrell-McElroy Co.	1,500
Empire Gas & Fuel Co.	1,000
Macmillan Refining Co.	3,500
Midwest Exploration Co.	1,300
Phillips Petroleum Co.	8,000
Pampa Ref. Co. and H. F. Wilcox Oil & Gas Co.	3,000
Total	64,616

*Cut down from 13,000 bbls.

North Texas District

New nominations by the various purchasing companies operating in the Wichita Falls or North Texas district are as follows:

	Bbls.
American Refining Properties (including Young County)	430
Continental Oil Co.	2,500
Dale Oil & Refining Co.	2,050
Gulf Pipe Line Co.	2,500
Humble Oil & Refining Co.	4,750
Iowa Park Producing & Refining Co.	1,250
Magnolia Petroleum Co.	7,400
Panhandle Refining Co.	2,500
Primrose Refining Co.	1,400
Southland Refining Co.	200
Stanolind Crude Oil Purchasing Co.	8,400
The Texas Company	13,500
Tidal Western Oil Corp.	1,500
Archer Refining Co.	100
Falls Refining Co.	500
Lloyd Oil Co.	30
La Salle Petroleum Co.	65
Muenster Refining Co.	20
Orient Refining Co.	300
Olney Refining Co.	1,000
Waggoner Refining Co.	2,000
Total	52,395

North Young County

New nominations in north Young County are as follows:

	Bbls.
American Refining Co.	400
Panhandle Refining Co.	600
Primrose Refining Co.	500
Humble Oil & Refining Co.	300
Iowa Park Producing & Refining Co.	1,250
Southland Refining Co.	200
The Texas Company	1,000
Taxman Refining Co.	400
Olney Refining Co.	200
Total	4,850

Nominations from the West Central Texas or Ranger district totaled 24,142 bbls.

The Lloyd Pool, southern Coleman County produced as follows on November 19: Lloyd Oil Corp., 14 wells, 260 bbls. daily, 185 bbls. pipe line runs; Tidal Oil Co., 6 wells, 20 bbls. daily, 18 bbls. pipe line runs; Taylor-Link Oil Co., 4 wells, 12 bbls. daily, 12 bbls. pipe line runs; Agnew, 2 wells, 25 bbls. daily, 6 bbls. pipe line runs; Kidney-Kamon, 2 wells, 25 bbls. daily, 6 bbls. pipe line runs; Joines, 1 well, 2 bbls. daily, 2 bbls. pipe line runs.

The Overall Pool of the same county produced 391 bbls. on November 19.

COMPLETIONS IN NORTH CENTRAL TEXAS

Archer County

Fain & McGaha Oil Corp.'s No. 1 West, dry and abandoned, total depth 1,457 feet. W. E. Maxson, Jr.'s No. 9 Green, oil sand 1,118 feet, initial production 35 bbls., total depth 1,132½ feet. McLaughlin Brothers' No. 1 Justice, dry and abandoned, total depth 1,205 feet. Panhandle Refining Co. and others' No. 1 Terrell, dry and abandoned, total depth 753 feet.

Baylor County

Burns and The Texas Company's No. 1 Mills, dry and abandoned, total depth 1,578 feet.

Clay County

Phillips Petroleum Co. and others' No. 1 Martin, dry and abandoned, total depth 4,475 feet.

Denton County

Hart Brothers' No. 1 Wilkerson, will temporarily abandon, total depth 410 feet.

Grayson County

Sherman Oil Co.'s No. 1 Dalton, oil sand 921-24 feet, initial production 27 bbls., total depth 924 feet.

Young County

Akin and Rayzor's No. 3 Winkler, oil sand broken 1,082-94 feet, initial production 32 bbls., total depth 1,094 feet. George Alexander and others' No. 2 Jeffery, dry and abandoned, total depth 818 feet. Belknap Coal Co.'s No. 1 fee, oil sand 665-71 feet, show oil 671-97 feet. oil sand 697-703 feet, initial production 140 bbls., total depth 705 feet. Glover and Wall's No. 6 Johnson, oil sand 494-526 feet, initial production 7 bbls., total depth 526 feet. A. C. Hill and others' No. 1 Benson, dry and abandoned, total depth 1,000 feet. King Royalty Co. and Bullington's No. 6 Graham, oil sand 688-703½ feet, initial production 400 bbls., flowing, total depth 703½ feet. McDonald and Campbell's No. 1 Jeffery, dry and abandoned 854 feet. Perkins and Cullum and Anderson's No. 1 Barnhart, dry and abandoned, total depth 1,113 feet. Roy Seitz's No. 2 Finch and others, oil sand 627-37½ feet, initial production 90 bbls., total depth 637½ feet. The Texas Company's No. 1 Lunn, dry and abandoned, total depth 1,212 feet. Wooten and Reed's No. 2 Horton, oil sand 604-12 feet, initial production 90 bbls., total depth 612 feet. Wooten and Reed's No. 5 McBrayer and others, dry and abandoned, total depth 631 feet. A. P. Bisse's No. 1 Woodfork, dry and abandoned, total depth 812 feet. Marshall, trustee's No. 1 Johnson, dry and abandoned, total depth 350 feet. Martin and Maer's No. 1 Foster, location abandoned. Panhandle Production Co.'s No. 1 Mayers, dry and abandoned, total depth 4,815 feet. Taylor and others' No. 1 Lewis, dry and abandoned, total depth 810 feet.

COMPLETIONS IN RANGER DISTRICT

Brown County

Phillips, Samuels and Van Bibber's No. 1 Evans, dry and abandoned, total depth 2,353 feet.

Eastland County

Fifty-Six Petroleum Corp.'s No. 1 Hunt, top pay 3,181 feet, shot 10 quarts 3,181-3,200 feet, initial production 18 bbls., total depth 3,203 feet.

Coleman County

Texas-American Syndicate's No. 3 Newton, top pay 3,820 feet, initial production 350 bbls., now flowing 250 bbls. daily through 2-inch tubing, 400 pounds pressure, total depth 3,847 feet. Guffey Brothers and others' No. 1 Peggie Brothers, dry and abandoned, total depth 1,550 feet. J. L. Harmon Harris' No. 1, show gas 2,239-2,388 feet, show oil 2,388 feet, total depth 2,388 feet, plugged back to 2,295 feet, shot 30 quarts 2,265-95 feet, initial production 1,042,560 feet of gas. Mace and others' No. 1 Baker, dry and abandoned, total depth 1,480 feet.

Stephens County

Universal Oil Co.'s No. 1 Corbett, dry and abandoned, total depth 4,775 feet.

COMPLETIONS IN PANHANDLE DISTRICT

Gray County

British-American Oil & Production Co. and Shell Petroleum Corp.'s No. 2 Richardson, top pay 3,225 feet, shot with 180 quarts from 3,235-70 feet, initial production 400 bbls., total depth 3,275 feet. Cockrell-McIlroy Oil Co.'s No. 2 Allan, top pay 3,260 feet, shot with 160 quarts from 3,222-67 feet, initial production 170 bbls., total depth 3,280 feet. Empire Gas & Fuel Oil Co.'s No. 2-B Archer, top pay 3,146 feet, shot with 120 quarts from 3,175-3,210 feet, initial production 230 bbls., total depth 3,240 feet. Empire Gas & Fuel Oil Co.'s No. 2 Sailor, top pay 3,185 feet, shot with 120 quarts from 3,180-3,215 feet, initial production 294 bbls., total depth 3,240 feet. Southern Petroleum Exploration Co.'s No. 1 Baird, top pay 3,158 feet, shot with 200 quarts from 3,207-76 feet, initial production 487 bbls., total depth 3,276 feet. The Texas Company's No. 5 Harrah, top pay 3,160-3,225 feet, shot with 140 quarts from 3,152-3,248 feet, initial production 452 bbls., total depth 3,248 feet. Wilcox-Pampa Oil Co.'s No. 33 Worley and Reynolds, top pay 3,035-54 feet, initial production 190 bbls., total depth 3,059 feet. Gulf Production Co.'s No. 3 Thompson, top pay 3,267 feet, shot with 210 quarts from 3,230-74 feet, initial production 208 bbls., total depth 3,274 feet.

Hutchinson County

Great Plains Oil & Gas Co.'s No. 1 Sanford, total depth 2,784 feet, plugged back to 2,754 feet, top pay 2,735-50 feet, initial production 20 bbls. of oil and 10 bbls. of water. Spurlock and others' No. 1 Christian, top pay 3,200 feet, shot with 140 quarts from 3,150-3,220 feet, initial production 20 bbls., total depth 3,220 feet. Stansylvania Oil Co.'s No. 1 Whittenburg, top pay 3,025 feet, initial production 25 bbls., total depth 3,075 feet.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending November 24

Company, well, farm, name, section and block—	Remarks—
CARSON COUNTY	
Empire G. & F. Co.'s No. 1 Jordan et al, C SE, Sec. 94, Blk. 4, I.&G.N. Sur.	Drlg. 1,975 ft.
Empire G. & F. Co.'s No. 1 Simms, 2,310 ft. N, 990 ft. E, N½, Sec. 12, Blk. 7, I.&G.N. Sur.	Drlg. 3,480 ft.
Gibson Oil Corp.'s No. 1 Foster & Co., C NW, Sec. 24, Blk. 7, I.&G.N. Sur.	Drlg. 2,100 ft.
Plains Holding Co.'s No. 1 McConnell, C NW, Sec. 45, Blk. 4, I.&G.N. Sur.	Drlg. 2,590 ft.
Krebs & Barnard's No. 1 Barnard, 660 ft. S and W, NW, Sec. 24, Blk. 4, I.&G.N. Sur.	Drlg. 1,012 ft.
Lone Star Gas Co.'s No. 1 McConnell, C SE SW, Sec. 65, Blk. 4, I.&G.N. Sur.	Drlg. 425 ft.
Magnolia Pet. Co.'s No. 1 Burnett, 330 ft. N and W, W½ NW, Sec. 101, Blk. 4, I.&G.N. Sur.	Drlg. 1,410 ft.
North American O. & G. Co.'s No. 1 Polling, 1,320 ft. N, 1,500 ft. E, Sec. 24, Blk. Y-2, T.T.R.R. Sur.	Location.
Plains Holding Co.'s No. 2 McConnell, C S½ NE, Sec. 46, Blk. 4, I.&G.N. Sur.	Drlg. 1,890 ft.
Plains Holding Co.'s No. 3 McConnell, N½ NW, Sec. 46, Blk. 4, I.&G.N. Sur.	Rig on ground.
North American O. & G. Co.'s No. 1 McEwen, C SE, Sec. 1, Blk. 4, I.&G.N. Sur.	Drlg. 2,390 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, C W 100 ac., SW, Sec. 84, Blk. 5, I.&G.N. Sur.	Drlg. 1,400 ft.
CHILDRESS COUNTY	
C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.
COLLINGSWORTH COUNTY	
Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	S.D. 510 ft.
GRAY COUNTY	
Adams, Prince et al's No. 1 Morse, 330 ft. NE SE, Sec. 6, Blk. 26, H.&G.N. Sur.	Rotary rig.
Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.& G.N. Sur.	G.W. pay 2,912-15 ft; C.O. after 500-qt. shot; S.D. 2,915 ft.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Smith, 330 ft. S and E, NW, Sec. 138, Blk. 3, I.& G.N. Sur.	Location.
Beck's No. 1 Sullivan, 330 ft. N and E, W½ NW, Sec. 135, Blk. 3, I.&G.N. Sur.	Drlg. 2,270 ft.
Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur.	Rotary rig.
Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur.	Fishing 600 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Harbaugh, 1,263 ft. N, 330 ft. W, Lot 182, Sec. 114, Blk. 3, I.&G.N. Sur.	Drlg. 3,230 ft.
Cree & Hoover's No. 1 Call, 330 ft. N and W, SW, Sec. 105, Blk. 3, I.&G.N. Sur.	Rigging up rotary.
Empire G. & F. Co.'s No. 1 McCullough, 1,320 ft. S, 886 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur.	Drlg. 925 ft.

(Continued on Page 100)

NORTH TEXAS PRODUCTION

Week Ending November 22

Panhandle district—	
Carson County	6,065
Hutchinson County	13,340
Gray County	55,705
Moore County	268
Potter County	0
Wheeler County	490
Total production this week	75,868
Total production last week	75,060
Increase	808
Wichita Falls district—	
Archer County	13,462
Baylor County	966
Clay County	656
Cooke County	3,141
Foard County	139
Jack County	1,627
Haskell County	38
Montague County	5,783
Throckmorton County	705
Wilbarger County	17,077
Wichita County	22,187
Young County	11,915
Total production this week	77,696
Total production last week	77,705
Decrease	9
Ranger district—	
Brown County	5,171
Callahan County	3,029
Coleman County	2,731
Comanche County	1,071
Palo Pinto County	461
Eastland County	4,115
Shackelford County	5,315
Stephens County	5,330
Total production this week	27,223
Total production last week	27,697
Decrease	474

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WHILE production is slack, the wise executive is looking over his plant, replacing worn equipment, making changes here and there to gain higher efficiencies, and getting things ready for the reawakening of industry.

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O&GJ-A

Pipe Line Construction News

PLACING PIPE ORDERS NOW IS RECOMMENDED

By B. E. V. Luty

PITTSBURGH, Pa., Nov. 24. — Some of the large orders for pipe line on which producers were working at capacity in September have lately been completed while nearly all the others will be completed very shortly, in time for the pipe to be laid before the weather becomes unfavorable. Line pipe production was at capacity for five or six months, in fire weld, electric weld and seamless. Not a few line pipe orders are being placed from week to week but they do not count for tonnage. They show, however, that work is to be done, chiefly in Louisiana, Texas and Oklahoma.

After the big rush of line pipe buying in the spring there were left various projects. A few of them developed into orders and a few were dropped, but several have remained and some additional projects have come out. When a project does fully mature the order is placed at once, and it would be the enterprising thing to buy in the next few months when producers need business, rather than in circumstances like those of last June when the question was to arrange satisfactory deliveries, order books representing capacity operations.

The complications are various, there being difficulty sometimes in securing rights of way, or franchises. Sometimes there may be difficulty in financing, and finally there is the matter of mergers. A company may be maturing a piping project and then find it can merge to advantage with another company already having line pipe facilities.

Steel ingot production last week was approximately the same as week before, somewhat under 45 per cent of capacity. At a few plants there appear to have been slight increases, but the decreasing trend predominates. Considering the extreme dullness of trade generally, and the season of year, steel production is not so very poor after all. The current rate represents 27,000,000 to 28,000,000 gross tons per annum and it was not until 1912 that so large a tonnage was actually made in a year. Of course that is a long time ago, but the steel industry was regarded as large at that time and steel was supposed to be in general vogue. Current percentages look small partly because capacity has increased so much, more apparently than necessary. It has been chiefly a matter of rivalry between independents, the Steel Corp. having increased its capacity but little, and of producers striving for lower costs. Apparently every effort at cost reduction involves an increase in capacity.

Seasonal decreases in steel consumption have now nearly all occurred, and buyers have been so rigidly curtailing stocks already that there can hardly be much further decrease in steel demand to the end of the year. An upturn in steel production immediately after January 1 is virtually certain, by present prospects and in accordance with invariable precedent. Usually production increases up to March or April, in a seasonal way, but the largest seasonal increase conceivable would not give the industry a fair operation rate. A widespread improvement in general business is necessary for that.

The movement to stabilize prices on bars, shapes and plates at 1.60 cents, inaugurated a nortnight ago by the formal announcement of the Carnegie Steel Co. as to its price, has much promise of success. The point is not so much the precise price as to get sellers in the habit of quoting the full price, eliminating the irregular cutting there has been, chiefly on plates and shapes in connection with fabricated structural work. There are some reports that the stabilization if successful may extend to other steel products, but that is rather doubtful, conditions in other lines being different. Standard pipe has no need of stabilization, having been in that condition.

The Jones & Laughlin Steel Corp. is giving employment to 97 per cent of its normal working force through shorter hours and an extensive building and improvement program. The corporation employs 23,000 men. The improvement program, under way for the past year, involves an ultimate expenditure of $21,000,000.

CONTINENTAL TO BUILD OKLAHOMA CITY LINE

Construction of a Continental Oil Co. crude oil pipe line 81 miles in length, connecting the Tonkawa, Okla., and Oklahoma City production fields, at a cost of well over $500,000 will begin early in December, it is announced by E. H. Skinner, manager of the Continental pipe line department.

The new line is to be of 8-inch, seamless, welded design. It will be connected with Continental's line extending between Tonkawa and Ponca City and is being built for the purpose of insuring an additional supply of crude for Continental's Ponca City refinery.

Contracts for the line will be let on December 3 and actual construction work is expected to begin about December 13 and be completed within 60 days. The survey of the route to be taken by the line and the purchase of all necessary right of ways were accomplished more than six months ago, Mr. Skinner said.

The ultimate daily capacity of the line operating under pressure provided by two pump stations is estimated at close to 20,000 bbls. Only one station will be built at first, however, and approximately 12,000 bbls. will be put through the line each day. This first station is to be located on the northern edge of the Oklahoma City Field.

Continental is building the line in anticipation of future volume, and also for the purpose of making profitable use of the high grade petroleum produced by the Oklahoma City Field. Conoco producing wells in this field now number four and potential daily production is estimated at 24,000 bbls. Continental already owns and operates 1,350 miles of pipe line and is one of the major owners of the Great Lakes Pipe Line Co., now building a gasoline pipe line from Ponca City to Chicago, by way of Kansas City, Des Moines, Milwaukee and St. Paul.

OKLAHOMA'S GAS LINES

A franchise to supply natural gas to Coyle, Okla., was granted to the Pact Gas Co. in an election held November 18. The company within a few days will begin construction of about 6 miles of gas line to connect Coyle with its system which now serves Agra, Perkins, Tryon and Vinco, according to R. M. Tuttle, Cushing, president. The system is expected to be completed in Coyle within 60 days.

Citizens of Verden, Okla., voted a gas franchise to the State Fuel Supply Co. The company has begun construction of 10 miles of 4-inch line to connect Verden with the company's gas transmission line system at Anadarko. A distribution system is also being constructed in Verden. The State Fuel Supply Co. has completed 6 miles of 4½-inch gas line to wells south of Wewoka for the purpose of increasing its supply of natural gas for Wewoka during the winter.

A natural gas distribution system has been completed at Wilburton, Okla., by the Freeborn-Lambert Co. of Tulsa. The supply will come from wells near Wilburton.

WYOMING LINE POSTPONED

CASPER, Wyo., Nov. 22. — The projected pipe line from the oil fields in the Big Horn Basin, northern Wyoming, to Billings and Laurel, Mont., which the Wyoming-Montana Pipe Line Co. proposes to build, will not be begun until spring. The Wyoming Public Service Commission heard the company's application for a permit on August 25 and the company had planned to begin construction work in October. However, the decision was not handed down until last week when the commission dismissed the application without prejudice. The company took the position that a permit from the commission was not necessary for an interstate line, but desired to have one if it could be obtained. The commission held that the permit was not required. The Ohio Oil Co., the Illinois Pipe Line Co., the Midwest Refining Co. and the Chicago, Burlington & Quincy Railroad opposed the granting of the permit on the ground that the territory was amply served for present market requirements and that the commission did not have jurisdiction.

LINE TO SCHURR POOL TO BE READY NEXT WEEK

Prairie Pipe Line Co. expects to have the new 8-inch pipe line from the Voshell Pool to the Schurr Pool, in Rice County, Kansas, in operation during the next week. It will be the first pipe line into the area which has been without any outlet for several months. Since the Independent Oil & Gas Co. discontinued taking oil from the pool by tank car shipments the operators have had the wells shut in. It is believed the Prairie Pipe Line Co. plans to handle around 50 bbls. a day per well from 11 completed wells in the pool. The estimated potential production of the pool is 15,000 bbls. a day.

The pool has at the present time nine completed wells and two others shut down on top of the pay horizon. These tests will be drilled into the pay formation in the next few days.

MISSOULA, MONT., WANTS GAS

The city of Missoula, Missoula County, Montana, has asked the Montana Power Co. to extend its proposed lines that will reach Livingston, Bozeman, Deer Lodge, Butte and Anaconda, to Missoula to give that city natural gas. At the same time the Minnesota Northern Power Co. has approached the city Chamber of Commerce for a franchise. This firm proposes to lay an extension of its line from Kalispell to Missoula and thus come in from the north while the line of the Montana Power Co. would be laid from the south. The Minnesota Northern has also purchased the plant of the Missoula Gas & Coke Co. and expects to use the mains of this plant, now laid in Missoula, to service the city with natural gas.

SOUTHERN-UNITED CONTRACT

United Gas Corp. has contracted with Southern Natural Gas Corp. to take over the latter's branch gas pipe lines extending from the main pipe line of the corporation near Jackson, Miss., to Mobile, Ala., and Pensacola, Fla., the purchase including branch lines to Bogalusa, La., and to Canton, Laurel, Hattiesburg, Gulfport and Biloxi, Miss.

PIPE LINE HEARING DELAYED

CHICAGO, Nov. 22.—The Illinois Commerce Commission has delayed until November 26 the hearing on the application of the Great Lakes Pipe Line Co., of Illinois to, to issue $100,000 in capital stock.

ENGINEER REPORTS ON SASKATCHEWAN PROJECTS

CHATHAM, Ontario, Nov. 22.—A lengthy report has been submitted to the Regina city council by H. R. Davis of Buffalo, natural gas engineer, retained by the various Saskatchewan cities to report on the competitive proposals submitted for natural gas franchises. The proposals involve the supplying of natural gas to Regina, Moose Jaw, Saskatoon and Swift Current, and the cities are planning to deal with them jointly.

Mr. Davis reports that the two most feasible sources of supply are the Kinsella Field in east-central Alberta, about 75 miles east of Edmonton, and the Bowdoin Field in northern Montana, about 175 miles from Regina.

Discussing the possible life of the Kinsella Field, Mr. Davis quoted an estimate of Ford, Bacon & Davis that there is enough gas in sight to supply the Saskatoon, Moose Jaw and Regina systems for 11 years, and a practical certainty of the discovery of additional reserves sufficient for more than the 20 years contemplated in the franchise.

The proposals submitted to the Saskatchewan cities included one from Tri-Cities Utilities, Ltd., headed by C. O. Moore to bring gas from the Kinsella Field; the Dominion Gas & Electric Co., headed by C. J. Yorath, to bring gas from Turner Valley; the Regina Gas Co., also known as the Teeney-Williams interests, to bring gas from the Bowdoin Field in Montana, and a group of Independent oil operators, proposing to bring gas from Turner Valley.

C. E. Roth submitted a tentative proposal to pipe gas to the Saskatchewan cities from the Cypress Hills area in southeastern Alberta; but according to the Davis report, the failure to strike gas resulted in that field being no longer a factor in the situation.

In regard to the Turner Valley Field, Mr. Davis' report states that uncontrolled production of natural gas will undoubtedly hasten the exhaustion of the field, and that a pipe line from Turner Valley would cost about $5,000,000 more than one from the Kinsella Field, the necessary charges upon this extra amount adding about $30 a year to the average gas bill.

In relation to the Bowdoin Field, a factor is the duty of 6 cents per 1,000 feet now imposed on natural gas entering Canada. In relation to the Kinsella Field, strong objection has been raised by Edmonton to export gas from that area, which has been regarded as a reserve for Edmonton. On these points the Davis report says:

"The Regina Gas Co. proposes to pipe gas to Regina from the Bowdoin Field in Montana. This is the gas field nearest to Regina. The reserves already developed are more than adequate for the life of the franchise. The gas is subject to a duty of 6 cents a 1,000 feet. If this duty were removed, the gas could be sold to domestic consumers about 10 cents cheaper than gas from any other field. Including the duty, the rate would be about the same as Kinsella.

"The possibility of removing the duty and the advisability of importing gas from the United States are subjects upon which I can give the council no advice. It may not be out of place for me to suggest that certain interests in Alberta are strongly opposed to the export of gas from that province to Saskatchewan. If they succeed in their endeavor it should be possible to make the Montana gas available for Regina."

It is expected that after discussion one of the projects will be selected by the municipal authorities in the cities concerned and submitted to the ratepayers.

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Side Suction Slush Pumps.

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ALUMINUM FOIL IS NOW USED FOR TANK ROOFING

(Continued from Page 31)

ficient working to make the foil so springy that it will not stay in place.

Advantage is taken of the cold working effects in the locked seam, here the foil is worked four times by both drawing and rolling operations which result in making a very firm joint as the foil at the seam is harder, stiffer and stronger than when it comes off the coil, but is not hard enough to crack. Hand locking or the common methods of crimping metal will not produce this effect. From the collaborated reports of various authorities we learn that aluminum enjoys a high degree of reflectivity and, therefore, has low emissivity. By analysis for a wave length of 0.589 the reflectivity is given as 83 per cent and increases with wave length becoming 93 per cent for a wave length of 5.0 microns. The reflectivity of molten aluminum is given as 88 per cent and of aluminum oxide powder 85 per cent. The surface produced on foil by rolling has a higher reflecting power than a burnished surface and is given as above 86 per cent. Aluminum amongst the metals is one of the best reflectors of ultra violet light and this is the main reason why glasses opaque to ultra violet light should be worn by men working in the sunlight with foil. See Figure 10 for reflectivity curve.

Reflectivity

Consideration of the reflectivity relations involves convection or air movement factors, for heat will accumulate during periods of quiet air thereby allowing the temperature to rise until it is high enough to dissipate the heat by radiation as fast as it is absorbed. A slight movement or circulation of the air will carry away heat and the temperature will be lowered.

Absorption takes place principally from the sun's rays and is maximum when these are perpendicular to the surface. Surfaces of wood, paper or unpolished metal absorb the rays or waves emitted by the sun at a rate comparable with a dull black surface. Where metal is concerned the heat thus absorbed is conducted to cooler points and in the case of oil tanks it would be conducted to that part of side in the shade and to the oil by way of the roof supports and by radiation. Poor conductors such as wood and felt would be heated locally and to a higher temperature.

When a highly reflective surface is used a much smaller amount of heat is absorbed so there is less to conduct away and the temperature which represents the potential or power to cause the heat to flow is correspondingly less. The attained temperature is expressed in the general formula $T = \frac{H}{R}$ where H is the total heat flowing and R is the effective resistance of path or circuit.

Then it is clear that with a given velocity of air past the heated surface the highly reflective surface absorbing heat at a low rate will have its temperature reduced in greater proportion than will the highly absorptive surface.

This is clearly shown in the laboratory test data here given:

Steel panels 5"x10"x$\frac{1}{16}$" were covered on one side, one with saturated felt and another with aluminum foil. Protected thermometers were secured to the backs of panels. These were exposed in a position normal to the sun's rays and the values shown below represent average results:

TEMPERATURE IN DEGREE FAHRENHEIT

	Air temp.	Felt temp.	Temp. above air	Al. temp.	Temp. above air	Temp. diff. between foil and felt
No air circulation	80	135	55	116	36	19
Air movement about 7 miles per hour	69	122	53	84	15	38

Thus with air circulation the tank or other object protected against radiant heat will approach the temperature of air more rapidly than that with a highly absorptive surface.

Reduction of tank temperature by reflection of heat is one of the most valuable attributes of aluinum foil and the data given above indicate that the best results possible may be expected and that the oxidizing of the aluminum surface does not materially affect this quality.

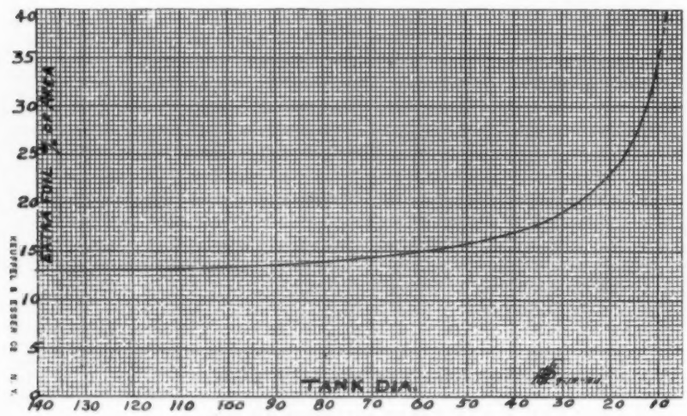

Figure 7—Curve showing how foil actually required increases proportionately with decreasing diameter of tank.

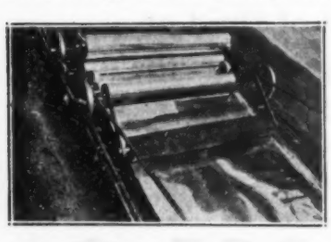

Figure 8—The track is flexible enough in one direction to conform to curvature of roof but more rigid in the other direction to assure guidance of foil layer.

Work initiated by F. W. Peek, Jr., on the relation of lightning to storage tanks is summarized in the Journal of American Institute of Electrical Engineers for September, 1927. Here the reader will learn that insulated or partially insulated pieces of metal or wet wood create a hazard during the passing of electrically charged clouds; sparks are very likely to occur. On the other hand a complete conducting surface connected to the ground will eliminate all tendency for sparks to occur, and sparks have started many oil fires. Wood or composition roofs such as used on earthen storage can now be made vapor tight, weatherproof, fire resistant and spark proof by a sheathing of locked seam aluminum foil.

Protection Against Sparks

In order to give complete protection with the Meta-Foil Roof against sparks on metal roofs the foil is electrically connected to all fittings on the roof, a distributing band or cable of heavy gauge aluminum is clamped around the edge of tank over the foil and at regular intervals strips of aluminum are locked into the seam of sheath at one end and are bolted to the distributor at the other end as shown in Figures 5-b and 6. The distributor is connected to the tank and can be especially grounded when desired.

Protection against direct strokes of lightning can only be had by erection of towers or lightning rods to considerable heights.

Calculations for applying foil must be made with some show of precision and it must be realized that more foil will be required than that equivalent to the exact area to be covered.

Tanks usually have sloping roofs which range in pitch from one-half inch per foot to 2 inches or 3 inches per foot, some have inside angles at the eaves and some have outside angles. In making the estimate for a standard roof 5 per cent extra foil must be provided for the seams whether lapped or locked, the foil to lap over eaves will amount to 1 per cent for 100-foot diameter tank, to 5 per cent for 20 feet diameter, waste by trimming around circular edge will run from 2 per cent to 12 per cent and there is always some waste due to rough trimming, short ends and foil accidently damaged which will amount on the average to about 5 per cent, so the allowance for extra foil above the area of roof will run from 13 to 35 per cent and for umbrella roofs it may reach 50 to 60 per cent, see Figure 4. With lapped seams the allowance for extra foil must be greater as laps are not uniform and have in some cases been as much as 4 or 5 feet. The curve in Figure 7 is based on this estimate. This recalls the cost figures presented in advertising matter by another manufacturer of adhesive early this year which took none of these factors into consideration.

The manufacturers of foil quote a variation in thickness of 10 per cent plus or minus and find it rather hard to keep within these limits. It is common to find foil varying from 12 to 15 per cent and therein lies one of the advantages of having specifications.

All the novel features of this development are subjects of patents applied for which are the property of Metalfoils, Inc., a company formed to take over this development work which was started early in the year by the St. Louis Surfacer & Paint Co. The complete aluminum foil application as described above is known as the "Meta-Foil Roof" and the seam as the "Meta-Curl."

There have been experiences connected with foiling which have not been without their morals. A lap seam job of the early type lost some of its foil in a wind storm. At another installation the tank was steamed out preparatory to repairs while a high wind was in progress and several large strips of foil were blown from the tank, some catching on adjacent wires. With the ordinary adhesives used a lap seam sheath of foil will be unsafe at temperatures above 150° F. and when tanks are steamed out the temperature is likely to be raised much above this point.

High temperature adhesives have been developed but their cost is greater and their necessity is rendered impotent by the newer method of locking the seams which insures a complete covering mechanically that can be separated only by tearing.

Figure 9—Foiling a large tank in Texas.

Recently, an application of foil was made over what looked like a good coating of aluminum paint only a few months old. The foil refused to stick down in places and an investigation proved that paint, red lead and steel scale were sticking tightly to the foil but leaving the roof. Inquiry elicited the information that the tank had been painted while very cold and wet. The locked seam functioned perfectly in this case and forestalled the expensive operation of sandblasting which would have had to be done if lapped seams were used.

Loose plates, weak spots, leaks and sharp projections on surface are met with and all must be remedied before foil is applied.

After much experience with the foil layers mentioned above it was found that track could be used to provide more accurate guiding and keep the foil layer wheels out of the adhesive. The latest development in laying foil is shown in Figures 8 and 9. These foiling machines are the only means by which foil can be laid even and straight over extensive areas. The coil of foil is carried on top and the sheet of foil is passed un-

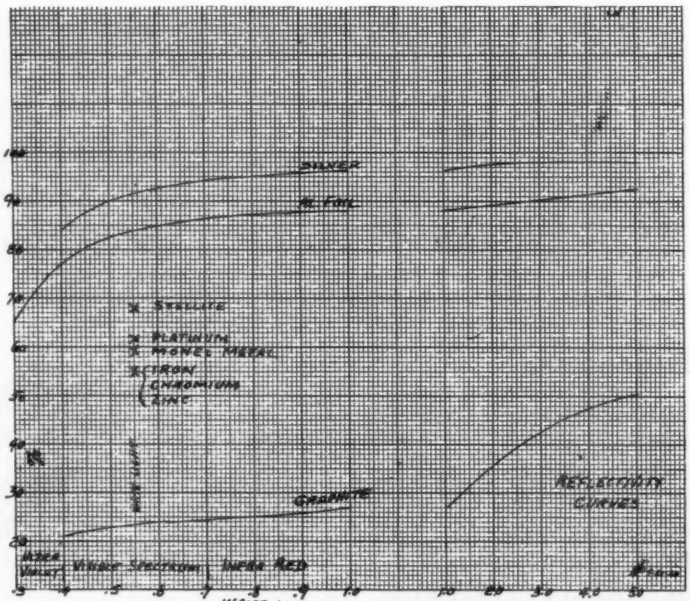

Figure 10—Curves from work on reflectivity of polished metal by Coblentz.

der a large roll on ball bearings after which the foil goes through an ingenuously arranged die which turns up both edges. The perfecting of this die was a considerable problem. On a flat surface these edges are abutted without difficulty as the machine proceeds but when the surface is sloping and is uneven the track provides the guiding force and assures straight abutting seams.

Though these machines were brought out in July and August of this year several small roofs including the roofs of two buildings have received the locked seam treatment and several large roofs are now being applied.

SOME ASPECTS OF THE HYDROGENATION PROCESS

(Continued from Page 33)

sulphur-free, pass doctor and corrosion after lye washing, and are quite gum stable. In a few cases, some light heating has been necessary, but this has been very small in amount.

As an example of this type of operation showing the effect of the hydrogenation process, a 15 per cent cut taken overhead from a 14 gravity cracking plant tar has yielded 85 per cent (not including a considerable quantity of recoverable light ends) of stable gasoline having a knocking tendency equivalent to 85 per cent of iso-octane in n-heptane. The interesting feature is that this charging stock, when cracked in an efficient high-pressure cracking process, yielded only 19 per cent of unfinished naphtha (having an antiknock value of 64 per cent iso-octane in n-heptane) and 67 per cent of unmerchantable tar, the balance being gas and coke. In other words, the charging stock to the hydrogenation unit in this case had the value of fuel oil plus distillation, and the product was worth premium grade gasoline value.

Additional results obtained by this method of operation are given in Table 3, showing yields and quality of product obtained by: (1) Cracking, and (2) hydrogenating several feed stocks. The following points will be noted:

1. For both cracking and hydrogenation better antiknock gasolines are obtained with more favorable stocks.

2. The most striking difference between cracking and hydrogenation appears to be not only the much greater yields, but also the much better antiknock value obtained by hydrogenation. It is also interesting that although the less paraffinic stocks give lower gasoline yields by cracking, this factor makes no apparent difference in hydrogenation, the so-called refractory stocks giving as high yields as the more readily cracked, high aniline point gas oils.

3. The antiknock value and yields of gasolines made by cracking are based on the unfinished naphthas. Final yields may be expected to decrease, therefore, and the antiknock value to become poorer as the gasoline is finished. In the case of the gasolines made by hydrogenation, the product leaving the unit requires no treatment (or very little), so the yield and knock ratings are representative of plant operation. It is interesting that in most cases where treatment of hydro antiknock gasoline has been necessary, the antiknock value has been improved somewhat thereby. Furthermore, although the antiknock values in Table 3 are correct for those cases where the per cent of iso-octane in n-heptane is less than 75 per cent, they are probably low by from about 0.5 to 1.5 per cent for the more highly antiknock gasolines. The knocking-rating spread, therefore, is even more in favor of the hydrogenated products than indicated.

4. The yield of hydrogenated gasoline appears to be practically independent of endpoints of the gasoline, e.g., 89.9 per cent and 89.5 per cent yield for 420° F. and 336° F. endpoint gasolines. This in general does not hold true for cracking plants.

5. A further interesting feature of the hydro gasolines made by the hydrogenation operation shows the antiknock characteristics of both hydrogenated gasoline and straightrun Mid-Continent gasoline as a function of the boiling points of their different fractions. In the straightrun Mid-Continent gasoline, the antiknock value for the lighter fractions is better than for the heavier fractions. In the case of the hydrogenated gasoline, however, although the antiknock value of the low boiling point fractions is better than that of the fractions of medium boiling point, the antiknock characteristics of the high boiling point fractions are much better than for the low boiling material.

6. The possibility of reducing by-product fuel oil production by means of this application of hydrogenation is readily apparent, since no tar is produced in the hydro operation.

Reducing fuel oil production by hydrogenation is susceptible of numerous variations, some of the most interesting involving the use of cycle gas oils from cracking plants in hydro units. Although these cycle gas oils may be rechecked, they have a low conversion per pass, and give low gasoline and high tar yields[3], resulting in increased cracking costs. In fact, it has been estimated that the last 10 to 20 per cent of the gasoline produced by cracking (i.e., the portion resulting from these cycle oils) costs nearly half again as much as that portion of the gasoline coming directly from the virgin cracking stocks. The same cycle gas oils are, however, not at all undesirable for treatment by hydrogenation, and in fact give high yields of highly antiknock gasoline (see Table 3). By recycling less heavily in cracking plants and treating the cycle gas oil in a hydro unit, the knocking tendency of the total refinery gasoline is improved and fuel oil production is decreased. It seems probable that cracking is often carried further today than is economically justified, and that for high gasoline yields almost any combination of the cracking with hydrogenation would be cheaper than cracking alone. The most desirable combination of the two processes of course depends upon local conditions.

Table 4 shows how combinations of cracking and hydrogenation of cycle gas oils work out on a virgin Mid-Continent charging stock. Thus the fuel oil production may vary from 0 bbl. per 100 bbls. of gasoline for the full hydrogenation operation to 43 bbls. of fuel oil per 100 bbls. of gasoline for straight cracking. The average knock rating is worst for straight cracking, and is about the same for the varying combinations of hydro and cracking shown.

TABLE 3—COMPARISON OF YIELDS AND QUALITY OF PRODUCTS BY HYDROGENATION AND BY CRACKING

Feed stock—	Mid-Cont. gas oil				West Texas cycle gas oil			
A.P.I. gravity	35.6		37.4		30.3			
Initial boiling point, °F.	414		474		460			
Percentage over at 460° F.	...		2.5		56.0			
Percentage over at 550° F.	...		89.0		...			
Percentage over at 595° F.	80		...		...			
Endpoint, °F.	...		618		612			
Sulphur, per cent	...		0.153		0.192			
Aniline point, °F.	165		162		102			
Products—	Cracking		Hydro.		Crack-	Hydrogenation		
Gasoline yield—per cent by volume	(1) 52.3	(2) 59.0	(1) 89.9	(2) 89.5	ing 40.2	(1) 94.5	(2) 89.6	(3) 94.8	(4) 92.0
Gravity, °A.P.I.	59.6	....	55.4	62.8	51.0	39.8	38.6	47.8	58.4
Initial boiling point, °F.	98.0	....	95.0	87.0	104.0	110.0	98.0	98.0	96.0
Percentage over at 212° F.	31.5	....	35.0	42.0	25.0	13.5	16.0	25.0	33.5
Percentage over at 284° F.	55.0	....	54.0	76.0	46.0	25.0	28.5	42.0	72.0
Percentage over at 356° F.	....	....	72.0	...	...	...	45.0	67.0	...
Percentage over at 374° F.	79.5	....	79.0	...	76.0	50.5	53.0	76.0	...
Percentage over at 400° F.	....	....	87.0	...	88.0	70.5	71.0	...	...
Endpoint, °F.	406.0	....	428.0	336.0	436.0	436.0	436.0	403.0	330.0
Antiknock value as per cent iso-octane in n-heptane	68.0	....	72.6	80.0	79.0	82.2	85.0	82.76	82.8
Sulphur, per cent	....	....	0.013	0.025	...	0.005	0.005	0.006	0.022
Gas formation, per cent	11.8	16.6	18.0	17.8	13.0	19.0	20.4	18.8	19.5
Tar formation, per cent	18.7	23.7	0.0	0.0	21.9	0.0	0.0	0.0	0.0
Cycle gas oil, per cent	17.2	0.0	0.0	0.0	24.9	0.0	0.0	0.0	0.0

Note—Column 2 under "Cracking," Mid-Continent gas oil shows estimated yields when no cycle gas oil is withdrawn. Experience indicates that the West Texas cycle gas oil would give about 45 per cent naphtha yield when no cycle gas oil is withdrawn.

TABLE 4—COMBINATIONS OF CRACKING AND HYDROGENATION AS AFFECTING GASOLINE KNOCK RATING AND REFINERY FUEL OIL PRODUCTION

Case*	Bbls. gasoline: By cracking	By hydrogenation	Per 100 bbls. gas oil	Antiknock† value of: Hydro gasoline	Average gasoline	Tar per 100 bbls.: Cracked gasoline	Total gasoline
1	0	90	90	74.0	74.0	0.0	0.0
2	23	57	80	78.6	74.0	19.0	5.5
3	34	38	72	81.4	74.0	26.8	12.8
4	41	25	66	87.5	74.0	30.7	19.1
5	45	17	62	90 6	74.0	36.0	26.2
6	54	0	54	‡63.5	63.5	43.0	43.0

*Case 2 represents once-through cracking, all the cycle gas oil being sent to hydro units. Cases 3, 4 and 5 represents various and increasing degrees of recycling. Case 6 shows the ultimate yield of gasoline as produced by complete recycling of cycle gas oil in the cracking unit. †As per cent iso-octane in n-heptane. ‡Antiknock value of finished cracked distillate. Also note yield and antiknock value of cracked gasoline. Higher yields can be obtained from this same feed stock, but only by sacrificing antiknock value or endpoint or both, or when withdrawing a lower gravity tar (12° to 13° A.P.I. in above).

General Considerations

The technical difficulties of hydrogenation are offset by the following major factors:

1. The flexibility of the process and equipment.

2. The process usually accomplishes in one treatment the equivalent of two or more alternative refining operations, for example, (a) production of the antiknock naphtha from gas oil, and (b) treating. Therefore, it is necessary to consider as the overall accomplishment not only the production of antiknock gasoline, but also the fact that the equipment required and the cost and losses of finishing have been materially reduced.

3. With hydrogenation it is possible to produce products of the desired quality from a very wide range of crudes.

4. There are especially advantageous possibilities in combining once through cracking with hydrogenation of the cracked gas oils.

5. Hydrogenation appears to raise materially the economic upper limit to the antiknock value of gasoline producible from petroleum. This will undoubtedly have a marked effect in the future on the design of automotive and aviation motors which, in turn, will react on the petroleum industry. A similar mutual action has been witnessed in the past seven years through the use of tetra-ethyl lead which first made possible the production of high compression motors, and in turn caused the oil industry to improve progressively not only the antiknock value of its premium gasolines but its nonpremium competitive grades as well.

Acknowledgment

The authors wish to take this opportunity of acknowledging their indebtedness to their many associates in the development of the hydrogenation process, and in particular the staffs of the research and development department of the Standard Oil Co. of Louisiana at Baton Rouge; the technical service division of the Standard Oil Co. of New Jersey; and the development department of the Humble Oil & Refining Co., Houston, Tex. The information on cracking contained herein was obtained by the two latter organizations.

[3]Sydnor and Patterson, "Cracking Value of Straightrun and Cycle Gas Oil," Ind. Eng. Chem., 22, 1,227, November, 1930.

Gulf Coast Refined Market Manifesting Increased Strength

HOUSTON, Tex., Nov. 25.—Except for the general lowering of the bunker fuel price from $1 to 90 cents, at which all terminals now are selling following the cut in the posting at new Orleans and Baton Rouge several weeks ago, there were no important changes in the Gulf Coast refinery market the last week. There has been an increasingly better tone in the general situation but this has not been reflected in moving prices of products which continue low. The fact, however, that the market apparently has been pegged lends support to the improved tone.

Several sales of fuel on the cargo quotation basis of 65 cents were reported. Fuel continued to be dominated largely by Venezuela crude and weak fuel on the Atlantic Seaboard.

Meeting Low-Priced Competition

The situation as far as the Gulf Coast locally is concerned apparently is in fair shape but in placing material on the East Coast Gulf Coast sellers have had to meet low-priced competition. In view of this, fuel in barge lots and moved to destinations out of coastwise trade is commanding a price of 75 cents in contrast to the cargo quotation of 65 cents.

The fact that Coastal crude is tight has been a steadying factor in the general refinery market on the Coast. There is practically no Coastal crude available and the majority of sources of supply are greatly oversold and withdrawn from the market. This is in contrast to conditions in other areas of the State but the general curtailment of operations in this area has effected a drastic reduction in the daily output within the past several months amounting to around 30,000 bbls. daily and has placed the production below the actual demand. The situation in other parts of the State still has a bearish influence on the Coast, but has not prevented the growth of better feeling here.

The reduction of bunker oil was not representative of the general market tone, but rather an equalization of postings among the various terminals with all getting into line on a more or less uniform price basis.

The purchase of Diesel bunker oil the last week by a major company on a basis of $1.70 a barrel establishes that market. However this material is limited both in its availability and its market.

Gasolines for spot movement evidently have steadied at a minimum of 6¼ cents although some contract material based on North Texas quotations continued to move under that figure in line with fluctuations in the North Texas market. Some spot gasoline was being sold for 6½ cents, indicating an improved situation.

Pale and red oils have reflected a slightly better tone although still uncertain as to price with some wide range of competition quotations still being reported.

PENNA. GRADE OVERPRODUCED

Producers of Pennsylvania Grade crude oil, as a whole, apparently are unable to keep their production down to a point where it will stabilize supply and demand. Crude has been going to storage notwithstanding a recent increase in runs to stills. The greatest trouble seems to be in the flooded fields of Bradford and Allegany, which two fields were altogether responsible for the large increase in production in the past 18 months. In the week ending November 15 the average daily runs from the Allegany Field were 7,913 bbls. per day as against 6,708 bbls. per day in the week previous. In the same week Pennsylvania Grade crude was cut 15 cents per barrel throughout the territory. It is understood that an average of 63,858 bbls. per day of Pennsylvania crude was run to stills in the week ending November 8 and that there was not a market for all of the product of this quantity of crude.

ENGINEERING RESEARCH PROGRESS AND PROGRAM

(Continued from Page 30)

stitute of Technology, Pasadena, Calif., under Projects 35, 36 and 37 covering "Variation in the Surface Tension of Gas-Saturated Petroleum With Pressure of Saturation," "Mobility Measurements on Suspended Oil Drops to Test Surface Charge," and "The Fundamentals of the Retention of Oil by Sand," respectively, are all of direct interest to the petroleum engineer.

As this work financed by the Rockefeller-Universal Oil Products fund will terminate June 30, 1931, it is the desire of the engineers connected with the American Petroleum Institute to have it continued and to this end a report was prepared by the advisory committee on development and production research which was presented to the committee of the board on fundamental research during the recent annual meeting held in Chicago, November 10-13, inclusive, and approved by the board and an appropriation of $100,000 for research work recommended.

Committee's Recommendations

The advisory committee is headed by K. C. Heald, H. H. Hill and E. DeGolyer and has been actively engaged in working out details of this research program.

During the Mid-Continent district A. P.I. meeting held last May Messrs. Heald, Hill and DeGolyer called a meeting of all interested engineers and production men in Tulsa at which time suggestions were made as to probable topics for research projects and 21 problems were suggested for study.

Later a list of these 21 subjects was sent to the California district and was reviewed by them with the result that they revised and consolidated the problems and condensed them into six major projects.

The list of 21 subjects was also submitted to the Mid-Continent and Southwestern district committees and they also consolidated them into about the same number and the same type of projects.

This uniformity of opinion on the part of engineers scattered over such a wide area indicated quite clearly that those projects selected were of prime importance and should have the recommendations of the research committee.

At meetings held in Chicago November 9 and 10 the advisory committee rechecked all recommendations and finally reduced the number of projects to five listed in the following order of their importance:

1. Recovery. (a) Physical properties of oil-gas mixtures. (b) Flow of oil, gas and water through porous media. (c) Characteristics of reservoir rocks.
2. Lifting. (a) Vertical flow of oil and gas mixtures.
3. Drilling. (a) Mud-laden fluids.

Recovery Problems

Each of these problems seem to present need for fundamental research for it is thought that the work so far done under Projects 35, 36 and 37 on surface tension, interfacial tension, viscosity, rate of solution of gas in oil in the presence of sand, change in volume and density of oil due to dissolved gas should be continued to furnish new data concerning the physical properties of oil-gas mixtures.

The work of Doctor Millikan thus far has brought to light some very interesting facts and extends the field of the research work done by Beecher and Parkhurst, and reported by them in a paper presented before the A.I.M.E. in 1926 under the title "Effect of Dissolved Gas Upon the Viscosity and Surface Tension of Crude Oil," page 51, Petroleum Development and Technology in 1926.

Doctor Millikan spent considerable time developing apparatus that could be used with pressures in excess of 2,000 pounds per square inch and he has reported on some of his work under these high pressures and it is understood that it will be continued using pressures in excess of 3,000 pounds because of the recent developments in deep drilling in Kettleman Hills, California, and elsewhere.

This type of work is of great value to the petroleum engineer working on production problems for if the fluidity of the oil is increased by holding gas in solution at high pressures it would seem advisable to produce these deep wells under high back pressures in order that the least amount of energy may be used in moving the oil through the reservoir to the well. It may also be desirable to maintain high pressures in the reservoir by introducing gas into the formation during the early life of the field, as seems to be indicated by the work now being carried on at Sugarland, Tex., by the Humble Oil & Refining Co.

Solution Rate of Gas in Oil

Information is also desired as to the rate of solution of gas in oil in the presence of sand as this is important in connection with both pressure maintenance and repressuring operations, as the number of wells needed and the rate of injection will be largely dependent upon the rate at which the gas is dissolved in the oil at the pressures used.

These factors are all important but when pressures in excess of 3,000 pounds are considered it may be found that it will be necessary to learn something of the solubility of oil in gas, for at such pressures the density of the gas approaches that of a liquid and a considerable volume of oil is dissolved in the gas.

Studies of changes in volume of oil due to dissolved gas are important and can be used in estimating reserves and calculating the energy required to lift the oil to the surface.

A study of the flow of oil-gas mixtures through sand or other porous media will furnish valuable information on the resistance to flow offered by gas bubbles and should indicate producing methods necessary to adopt to overcome this resistance. Experiments so far carried on seem to indicate that under certain conditions these bubbles almost totally stop the flow of oil to the well, but their effect may be minimized by maintaining low differential in pressure at the well. Valuable information may also be secured regarding the rate at which wells should be produced in order to minimize channeling, which has proven serious in repressuring as well as in flush production operating conditions.

Sand Study Essential

There are a number of methods now used to determine the characteristics of oil sands but it is possible that some standard method of reporting determinations of the porosity, saturation and permeability can be developed and a method devised for measuring the effective porosity as distinguished from the absolute porosity of oil sands.

In working out problems of unit operation this type of data is very essential in outlining effective well spacing programs, in determining well screen sizes, and establishing rates of flow and percentage of recovery that can be expected under different operating conditions.

There are fields in which it has been necessary to shut off the upper portion of the sand body in order to obtain appreciable increase in recovery of oil by introducing gas into them. Studies of porosity, saturation and permeability of sands will probably show that it is advisable to follow a similar plan in flush fields.

Work along these lines has been done by some companies but it might be correlated by some standard method and the research program of the American Petroleum Institute is the logical place for the outlining of such work.

Flow Through Vertical Pipes

Data of great value to the production departments of the oil companies can be secured through a study of the flow of oil-gas mixtures through vertical pipes and this data used in determining the size of tubing to be used in producing wells by natural flow, by gas lift operations and by pumping. Under certain conditions oil-gas ratios can be appreciably reduced by flowing wells through proper size tubing, but the lack of fundamental data on the factors governing flow of oil-gas mixtures through vertical pipes necessitates experiments on each well in order to determine the best size of tubing to select. By studying the rates of flow through various sizes of tubing, with different mixtures of oil and gas, over a wide range of bottom hole pressures, formulae may be derived that will be generally applicable.

By measuring the flow of oil-gas mixtures through various sizes of tubing and through various sizes of chokes at different bottom hole pressures, a method can be evolved for determining the capacities of wells without the necessity of producing them at maximum capacities for even a short time. Such a method would find immediate application for proration purposes.

Progress Predicted

Above are a few of the fundamental research problems that the engineers are interested in and which properly come within the province of the research committee for the American Petroleum Institute and with a fund available to carry on this type of work it is thought that much of the data already available from the work done during the past five years can be consolidated and correlated and made available for the petroleum engineers, while considerable additional data can be secured in the near future that will further aid him in his problems, especially those that have to do with deep wells and high pressures.

In addition to the problems outlined above the advisory committee gave consideration to problems dealing with mud-laden fluids used in rotary drilling, cementing of oil wells, relation between speed, pressure and rate of cutting in drilling and a study of drilling bits used in rotary work.

The fact that the engineers serving on the various district committees were so nearly in accord regarding the particular problems that were essential and upon which further fundamental data is needed and the approval of the committee's report by the Board of Fundamental Research, and the adoption of a resolution to raise a fund of $100,000 for the carrying of this type of work, is all very encouraging and it seems safe to predict that within the near future much new and valuable data will be made available and will be of much practical value to the industry and tend to lower drilling and producing costs as well as effect a greater recovery of the oil and conservation of the gas energy contained within oil pools.

WILBUR MUCH PLEASED WITH A.P.I. MEETING

WASHINGTON, D. C., Nov. 24.—The favorable attitude of the American Petroleum Institute toward oil conservation as shown by news reports of the Institute's annual meeting at Chicago have been highly gratifying to Dr. Ray Lyman Wilbur, Secretary of the Interior and chairman of the Federal Oil Board.

"I have gained the impression that there has never been a time when the oil industry has been more sincerely inclined to really face its problems than right now," said Doctor Wilbur.

"The oil industry has gotten by the period of holding someone else responsible for its troubles or expecting someone else to provide salvation for the men of the industry. They are realizing that salvation comes from within," he added.

"Do you notice a like tendency on the part of the States?" the writer asked.

"There is more and more a tendency on the part of the States to take hold of this question of conservation and prevention of waste. The States are now working out their own programs. I have always held that these problems could not be settled in Washington. A large percentage of production is entirely out of the hands of the Federal Government and under the control of the States. The oil states are realizing this fact and are facing with favor projects for state compacts to deal with them where single states cannot act with effectiveness alone.

"We did what we could here to point the way. If we can get the unit plan through at Kettleman Hills and can get oil legislation in the oil states for the control of waste of all sorts in the oil industry there is enough enterprise and ability in that industry to solve the problems involved," said Doctor Wilbur. —C. E. K.

P. N. GUTHRIE, JR., NOW PRESIDENT READING IRON

Following a special meeting of the board of directors of the Reading Iron Co. in Philadelphia. A. J. Maloney, chairman of the board, announced the election of P. N. Guthrie, Jr., as president of the Reading Iron Co. Mr. Guthrie has been serving as vice president in charge of sales. He succeeds Leon E. Thomas who resigned the presidency on July 31,

P. N. Guthrie, Jr.

1930. Since that time Mr. Maloney, as chairman of the board, has performed the executive duties of the president which will now be turned over to Mr. Guthrie.

Mr. Guthrie became vice president in charge of sales of the Reading Iron Co. on December 1, 1929. He was born in Pittsburgh, Pa., April 26, 1876. He received his initial training in the employ of Park Brother & Co. of Pittsburgh which owned and operated the Black Diamond Steel Works, the nucleus around which the Crucible Steel Co. of America was formed. Mr. Guthrie has had extensive experience also in the management and operation of Natural Gas Utilities in western Pennsylvania, West Virginia, Kentucky, Tennessee and southern New York.

He was engaged with the Philadelphia Co. of Pittsburgh in its natural gas division, was superintendent of Hornell Gas Light Co. of Hornell, N. Y., and general manager of Chemung County Gas Co. of Elmira, N. Y.

REFINED OIL PRICES IN CALIFORNIA STILL WEAK

LOS ANGELES, Calif., Nov. 24.—Refined oil prices in California showed a further weakening during the last week and, although the major companies have not shown any tendency to cut prices generally, several resellers of one of the larger companies have posted cut-rate signs in southern California territory, the posted quotation being 3 cents below the prevailing nominal price of 20½ cents a gallon.

Distress gasoline and bootleg product dropped slightly in price, retailing in southern California at 7 gallons for $1. These quotations include the existing road tax of 3 cents a gallon.

Fuel oil also showed a weakening tendency, spot sales being made on the basis of 40 to 50 cents a barrel. This reduction is attributed to the inability of small refiners to dispose of their current production of refinery residuum.

The ability to buy cheap crude oil in the Playa Del Rey Field as low as 35 cents a barrel is also a contributing factor toward lower prices for gasoline and fuel oil. The only bright spot in the refined oil market in California was the increased demand for smudge oil.

"sure Push the Gas through"

WHEN the chief engineer and the general superintendent look over a station monthly report, the first information they want is, "How many million cubic feet of gas did this station push through the line?"

The total usually gives them a feeling of satisfaction when Cooper-Bessemer Type-22's are on the job. It's the load-handling ability of these 1000 B. H. P. gas engine compressor units which makes them standard for large main line compressor stations.

"How much did it cost to handle the gas?" is usually the second question asked. Station men know from experience that these double-acting four-cycle engines do big jobs on a small amount of fuel gas and lubricating oil.

We believe that if you will visit one or two Cooper-Bessemer compressor stations, you will be convinced that Type-22's are the logical units for this service.

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MOUNT VERNON, OHIO GROVE CITY, PENNSYLVANIA

Hardin County Continues Most Active

Southeastern Part of Old Lima Field Has New Development. Jay County, Indiana, Has 50-Bbl. Well

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Nov. 24.—All divisions of the Central West Field were represented by one or more completions, although Central Ohio stands out as the leader as it has been each week during the year. In the southeastern part of the old Lima Field, near Kenton, in Hardin County, is the most actively developing work in any part of this producing territory. M. J. Lynch, well-known Lima producer, has a well reported good for 47 bbls. initial in a second test on the Newton Martin farm, Section 9, from the Trenton lime at a depth of 1,413 feet. This is a considerable distance from the discovery oil producer on the Geiger farm, southeast part of Section 12, Cessna Township, Hardin County.

Barnaby and others' No. 3 Kurt farm, Section 7, Pleasants Township, Hardin County, is reported with 540,000 feet of gas at 1,356 feet, and No. 4, same farm, showed 450,000 feet at 1,347 feet. No. 5, same farm, is due for completion. In Cessna Township, the American Oil Development Co. is starting a test on the Reed farm, Section 12, and the Ohio Oil & Gas Co. is starting a test on the C. L. Curtis farm, Section 1, same township.

CENTRAL OHIO

The Central Ohio Field shows a decided drop in new work, there being but 4 new locations and 14 wells started spudding, a total of 22, the lowest for the present season, due no doubt to the approach of winter. In completed wells there were 22, with 3 producers with an initial production of 57 bbls., 7 dry holes and 12 gas wells. This field has been a big producer of oil and gas and the drill will continue at the usual rate as gas is needed for the many gas lines out of the field.

In Ashland County, Jackson Township, the Ohio Fuel Gas Co.'s No. 2-5,330 R. J. Welch farm, and No. 1-5,299 B. M. Stillman farm were both gas wells, the first being in Section 7, and the other in Section 11. In Lake Township, Gold Crown Oil & Gas Co.'s No. 4 Harry Horn, Section 21, produced 25 bbls. initial from 574-650 feet. Robinson and others' No. 5 C. I. Sellers farm, Section 9, pumped 2 bbls. from 673-733 feet, and same parties are drilling No. 3 Fred Bird farm, Section 5, and No. 6 on the C. I. Sellers, Section 9. Wile and others are drilling No. 4 Henry Mosher farm, Section 22, same township. In Perry Township, Ohio Fuel Gas Co. struck a gas well in No. 1-5,297 Ora B. Morr farm, Section 6, while D'Lano and others found a dry hole in No. 4 on the Melvin Devault farm, Section 29, as no sand was found at a depth of 720 feet, the well being drilled for the shallow Berea sand.

In Medina County, Harrisville Township, Myers Brothers drilled a dry hole in No. 8 on the G. P. Mong farm, Lot 56, which showed no sand at a total depth of 2,830 feet. In Chatham Township, Curtis and others' No. 3 Thomas Brown, Jr., farm, Lot 22, produced an initial of 30 bbls. from 352-420 feet. Edsons Sons Co.'s No. 7 Marcus Frank farm, Lot 20, same township, filled up 310 feet with oil from 421-62 feet, and will make a nice pumper, with No. 8, same farm, drilling. Same firm is drilling No. 9 George W. Packard, Lot 1, same township.

Lorain County

In Lorain County, Carlisle Township, the Ohio Fuel Gas Co. got a gas well in No. 1-5,332 Sarah Booth farm, Lot 19. Wiser Oil Co. found no pay sand on the Milo Standen, Lot 38, Ridgeville Township, which goes as a dry hole. Dillon & McFrederick are starting a second test on the Cora A. Mills, Lot 73, Columbia Township, same county.

In Wayne County, Chester Township, Ohio Fuel Gas Co. reports a dry hole in No. 1-5,333 C. W. Bowman farm, Section 29, and Harmon & George found a light gas well in No. 2 Jacob Hagerman farm, Section 20, same township.

In Knox County, Pike Township, Perkins and others' test on the Fred Dowds farm, Section 19, is reported dry. Sand was found from 2,624-69 feet, also another sand from 2,655-60 feet, neither showing anything worth while.

In Coshocton County, Perry Township, the Preston Oil Co.'s No. 1-1,451 on the Elmer Clark farm, Section 14, was dry from 3,210-55 feet.

In Muskingum County, Washington Township, Ohio Fuel Gas Co. has a gas well in No. 1-15,256 John Mahaney farm, Lot 13, at 3,723 feet. Same company has a fishing job at No. 1-5,258 E. H. Derry farm, in the third quarter section, in Perry County, due to shooting the well, the shot going off in the string of 5-7/8-inch casing, the well being at a total depth of 4,218 feet.

In Athens County, Lodi Township, a gas well was drilled in No. 1-5,329 on the Jane C. Webb farm, Section 16, by the Ohio Fuel Gas Co., the gas being found in the Maxon sand from 888-910 feet. Same company has a gas well just in, No. 4-5,363 C. O. Grimes, Section 36, Berne Township, at 1,574 feet. Same company has a gas well in, No. 1-5,370 Martin Koehler farm, Section 25, Carthage Township, at 1,198 feet. Same company has a light gas well in No. 1-5,322 on the J. C. McClanahan farm, Section 6, Cannan Township, in the lower Berea sand at 1,431 feet. In York Township, J. J. Walters and others made a location for No. 2 Baird Brothers farm, Section 23, and Abe Snider and others made a location on the Bob Jackson farm, same section. Bowser Oil & Gas Co. is drilling a second test on the F. H. Ahrendt farm, Section 36, Troy Township.

Fairfield County

In Fairfield County, Richland Township, Patton & Bishop's No. 1 Fred McAtee, Section 32, is a light gas well in the Berea sand from 751-67 feet, and Sturm and others' No. 3 Jeff and George W. Shaw farm, same section, is a light gas well from the Berea sand from 784-85 feet.

In Guernsey County, Wheeling Township, Hopewell Oil & Gas Co.'s No. 3 F. L. Euga farm, Section 8, is reported a dry hole at 3,554 feet.

Hopewell Gas & Fuel Co. drilled in a 25-bbl. initial producer in No. 4 on the Allie Michael farm, Hopewell Township, Muskingum County, at 3,224 feet.

INDIANA

The best producing well out of four completions in Indiana was found in the old Trenton Rock area in the northeastern section of the State by William M. Stewart and others' No. 10 on the Davis Brothers farm, Section 27, Penn Township, Jay County, with an initial of 50 bbls. from the Trenton formation. In the same township near Pennville, the Flemwell Oil Co. is drilling No. 5 on the C. C. Harris farm, Section 16, 1 mile west of the hamlet of Balbeck in the same township. In Wayne Township, Milligan & Brown drilled a light gas well on the Smith's Stoney Quarry, about 2 miles south of Portland, and unknown parties drilled in a dry hole on the M. O. Hoppis lot in the town of Red Key, same county.

In Blue Creek Township, Adams County, George S. Lacknett is reported drilling No. 2 on the Marion Parr farm, Section 33.

The Salmo Oil Co. is drilling on the Charles A. Wiley farm, Section 18, Salamonie Township, Huntington County. In the early days of the field development this township showed some very productive oil producers as well as gas, and there is no doubt that other sections of the county contain producing areas not yet discovered, as this is the case in many counties over the State, where 35 years ago excellent wells were uncovered.

The Indiana Utilities Corp. reports a fair gas well on the James Shields farm, Section 21, Boone Township, Harrison County, southwest of New Albany, at a depth of 740 feet. Operators' belief is that more or less oil and gas will be found in nearly every one of the southern counties of the State along the Ohio River, at comparatively shallow depths.

A drilling permit has been taken out for a test to be made by the Westville Oil & Gas Co. in New Durham Township, Laporte County, southwest of the town of Laporte.

ILLINOIS

Five completions were reported from Illinois and a number of old producing wells were pulled out and abandoned. The best well was drilled by W. C. McBride, Inc., 600 feet from the south line and 250 feet from the east line of the John Magill farm, SE, Section 3, Montgomery Township, Crawford County, which produced initially 16 bbls. of 34 gravity oil the first 12 hours. Watson and others found a dry hole in a second test in the southwest corner of the E. E. Barrett farm, NW, Section 13, Prairie Township, same county.

John Phipps' No. 10 well, 900 feet from the south line and 600 feet from the east line of the J. W. Clark No. 2 farm, SW, Section 2, Dennison Township, Lawrence County, pumped 2 bbls. from 965-1,002 feet, and the same party drilled in No. 8 well, 450 feet from the north line and 210 feet from the east line of the William E. Robins farm No. 3, SW, Section 34, same township, to a total depth of 1,718 feet, and plugged it back to a pay sand at 1,627 feet, where it showed an initial of 6 bbls. In the same township, the Ohio Oil Co. abandoned No. 1 W. T. Buchanan, Section 6, and Nos. 2, 4 and 8 Brunson heirs, Section 4. Silurian Oil Co. abandoned No. 13 H. D. Hinkle, S half NW, Section 26, same township. Ohio Oil Co. abandoned No. 15 W. H. Rogers farm, SW, Section 17, Bridgeport Township, same county; also abandoned No. 5 C. E. Lawson, SW. Section 18, Lawrence Township.

Alspach and others' test, 2,500 feet from the north line and 800 feet from the west line of the Demint-Hardy farm, Survey 743, Renault Township, Monroe County, was dry at 560 feet.

Southwestern Oil & Gas Co. abandoned No. 9 L. Stein, SE, Section 5, Sandoval Township, Marion County.

INTEREST IN NEW LEGRANDE POOL EXTENDING TO ADJOINING COUNTIES

By George A. Whitney
Staff Correspondent, Kentucky-Tennessee

HORSE CAVE, Ky., Nov. 24.—Kentucky's real excitement continues to be centered in Hart County, with Horse Cave as the railroad town, the field being a few miles east of the town and near Legrande, the oil being found in the well known and reliable Corniferous formation, similar to the once Big Sinking Field, in Lee County. The finding of oil in this formation in Hart County means much for the development of Kentucky and is not by any means confined to the area now known as the Legrande Field, but will extend to other counties in the vicinity of Hart County, such as Green, Taylor, Marion, Larue, Hardin and Metcalf and possibly into Edmonson and Grayson Counties as well, and if such is the case, which is the belief of the average operator who has visited the counties, it means the opening of a larger producing area than did the Big Sinking Pool. Just south of Hart County lies the old-time Glasgow Field of Barren County, where thousands of wells have been drilled and which still contain areas favorable for production. The Scottsville Field of Allen County and the Bowling Green Field of Warren County are among the best fields opened in the past 10 years or more, and it was formerly the belief but little oil would be found farther in the western part of the State. Since then development has made a great change by the discovery of large producing wells in Ohio, Daviess, Hancock, McLean, Muhlenberg, Breckenridge and other counties like Henderson, Webster and Union Counties which are in the extreme northwestern section of the State. Within this area much natural gas is being discovered and the gas industry is growing rapidly all over Kentucky. It is only a question of time until every county within the boundaries of Kentucky will be producing more or less oil and gas, as many of the counties in the northern part of the State, south of the Ohio River, are ideal locations for test work for gas more than for oil.

Legrande Pool

In the Legrande Pool of Hart County quite a number of wells have been drilled to and into the sand, but their actual 24 hours' gauge has not been taken, and when these wells are all connected to pipe line it will no doubt surprise those who at first considered the field of little account. It is a remarkable field and will produce both oil and gas in abundance.

Among the 28 producing wells in the Legrande Pool there is none to which more significance is attached than the well on the Legrande school property and the well just brought in on the Colored school property of the Little Blue Springs district. These two wells are not more than a half mile apart and both are considered as being located in the better producing area of the Legrande Pool and the royalty of these wells will be applied to the common school fund of Hart County. The citizens of the entire county are anticipating more revenue for the school fund from other leases on Common school properties in this producing area.

Western Kentucky Wells

The shutdown in the Tri-County Field of western Kentucky which has been in effect for several months continues and many strings of drilling tools have been moved to the Hart County Field. Some wildcat work is under way and offsets are drilled but they are few when compared with the development before the shut-

(Continued on Page 158)

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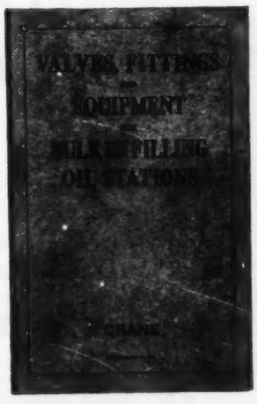

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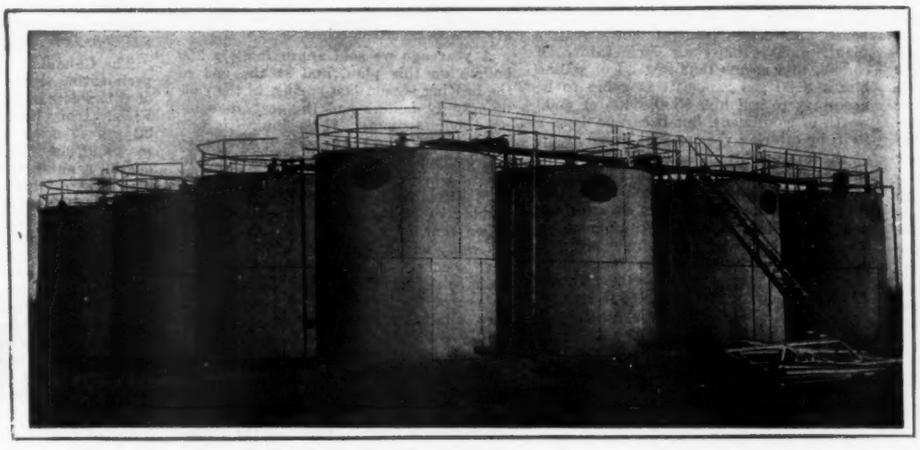

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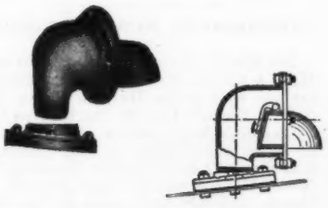

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Natural Gas Industry Developments

MUSKEGON CONSUMERS BACK TO ARTIFICIAL

MUSKEGON, Mich., Nov. 22.—Readjustments for the change back from natural to artificial gas will be started by the Muskegon Gas Co. on Monday, November 24, unless a very considerable new supply is struck in the Monroe formation in several wells now drilling in the Muskegon oil field.

An agreement to this effect was reached at an informal meeting of the Muskegon city commission attended by D. A. Powell, president and general manager of the gas company, and by John L. Robinson, superintendent of the West Michigan Consumers Co.

A force of 100 men, 30 from Muskegon now being trained to handle the work, and 70 experienced men from other properties of the American Light & Traction Co., parent concern of the Muskegon Gas Co., will be employed for about three weeks to make the change.

Although no definite figures were announced by Mr. Powell it was stated that the change to artificial gas probably would increase the cost for heating from 60 to 80 per cent over the present heating rate of 50 cents per 1,000 feet. No change in the rate for ordinary domestic purposes is anticipated but the increase in the heating rate is expected to result in the loss of 500 of the 684 customers now burning natural gas in their furnaces.

It is estimated that it costs about 10 per cent less than $10 coal to burn natural gas in regular gas fired furnaces under the present rates and that the many conversion jobs result in a heating cost about the same as $10 coal.

Mr. Powell pointed out that it will cost 45 cents per 1,000 feet to manufacture artificial gas so that it will be impossible to continue the present house heating rate of 50 cents after the change.

CALIFORNIA GAS PROPERTIES

The Inland Empire Gas Co. was authorized by the California Railroad Commission to transfer its properties and business in El Centro, Imperial, Brawley, Heber and Calexico to the Natural Gas Corp. of California, a subsidiary of the Pacific Public Service Co. The Natural Gas Corp. has been authorized to issue $124,500 of $100 par common stock in payment for the properties.

WAGONER GAS ELECTION

Wagoner, Okla., will vote December 9 on two proposed gas franchises, one to the Oklahoma Natural Gas Corp. and one to the Cherokee Public Service Co. Each company is asking for a 25-year franchise. The Cherokee Public Service Co., through its subsidiary, the Wagoner Gas Co., is now distributing gas in Wagoner, securing its supply from the Oklahoma Natural Gas Corp.

APPALACHIAN GAS SALES

Appalachian Gas Corp. reports sales of natural gas of subsidiary companies and affiliates, exclusive of those not operating during 1929, amount to 13,241,827,000 feet for the nine-month period ended September 30, a gain of 1,944,748,000 feet over the corresponding period of last year.

CASTOR GAS FRANCHISE

CHATHAM, Ontario, Nov. 22.—Young Petroleums, Ltd., which some time ago secured a franchise to distribute natural gas to the town of Castor, Alberta, has applied for extension of the time limit under the franchise to June, 1931.

GUARANTEEING GAS BILLS AND INSTALLATION COST AIDS SALES

By Emil A. Reinhardt
Special Engineer, Pittsburgh Water Heater Co.*

Every member of the gas industry is aware of the great load-building possibilities of gas-fired boilers and water heaters. However, the problem is to sell a sufficient number of gas-fired house-heating and water-heating installations to have the desired effect on the gas load. Up to this time few gas companies have been successful in selling a number of automatic gas water heaters equivalent to 2 per cent of their meters in any one year, and the sale of straight gas-fired house-heating installations has rarely gone beyond one-quarter of 1 per cent of the total number of meters in use.

In my opinion, the best thing to do is to turn a user into a profitable customer right at the start, and the easiest way to do this would be to sell him all of the gas appliances he needs at one time. He should be sold a gas range, an automatic water heater, one or more space heaters, some kind of a central house-heating plant, and perhaps an incinerator. Of course, this means that instead of selling him a $100 gas range, it is going to be necessary to sell him $300, $400 or $500 worth of equipment, but it can be done—first, by offering very special terms on all of the equipment, if he avails himself of the combination offer; and second, by extending the terms over such a long period as to make it almost as easy for the prospect to buy all of the equipment on long terms as to buy any single piece of equipment on shorter terms.

If we sell a man $500 worth of equipment and give him from two to five years to pay for it, his monthly payments will be very little more than if you sell him $100 worth of equipment and expect him to pay for it within six months or a year. The sales expense on the combination sale is much lower than on single items, and the installation expense, if the job is done at one time, will be much less. Last, but not least, the gas company has the benefit of the gas consumed by all of the appliances over the five-year period.

Fear of High Bills

Now as to the old market, the 9,000,000 or 10,000,000 gas users who do not have automatic water heaters nor gas-fired central house-heating plants, but merely use gas for cooking, and are consequently a source of loss to the gas company which serves them. The hardest thing to overcome when selling a prospect the idea of using gas for heating is his fear of high gas bills. Almost anyone to whom you talk about gas house heating today will admit it is the best and most convenient way to heat a house, but all of them worry about the cost. Experience has shown us that it is not so much what the actual cost will be as it is the uncertainty of what the gas bills will be that worries a prospect, and if you can remove this uncertainty from the prospect's mind, the sales resistance is greatly lowered.

About 18 months ago the boiler division of the Pittsburgh Water Heater Co. decided to carry on some experiments with the idea of offering the customer a guaranteed gas bill. We gathered together all the data we could possibly secure with regard to loss of radiation through various types of walls and the different types of construction, and we secured from the United States Weather Bureau records as to the average temperatures in different cities over the heating season, and from this information we developed formulas which we have used in estimating and guaranteeing gas bills. We did not allow our salesmen in the field to figure the radiation and guarantee the gas bills, but we instructed them to fill out questionnaire forms which we had made up for that purpose. These forms were properly filled out and forwarded to our engineering department; where, after taking into consideration the construction and dimensions of the building, the local gas rate, the number of degree days, etc., in that particular locality, an estimate was made of the cost of heating. To this estimate we added for a safety factor 15 per cent, and offered, under certain conditions, to guarantee the customer that his gas bills would not exceed the figure we had given him. The main condition was that the house was to be heated to the degree temperature desired by the customer, and fixed in advance, but we could assume no responsibility if this temperature was exceeded.

A year ago we sold approximately 250 boilers on this plan, and at the end of the heating season last spring, in the case of only 11 boilers had the cost gone beyond our estimate. It is interesting to note that of these 11 boilers, five were sold by one salesmen, who, apparently in order to help make the sales, had altered our estimates. We consider that this number of pulls, which represents about 5 per cent of the total sales, compares favorably with the number of pulls which have occurred in other territories where we have not guaranteed the gas bills, and we are of the opinion that guaranteeing the gas bills makes it tremendously easier for the salesmen to sell boilers.

Cost of Installation

A factor which has worked against the sale of central house-heating plants in the past has been the policy of most gas companies to quote a price on the equipment alone, without the cost of installing. The salesman, after securing a gas-fired house-heating prospect, has to go and get someone, either an employe from his own company, or else an outside steam-fitter, to go and figure the installation cost on any particular job. With this in mind, we have made up a special price list which includes the installation where the radiation is already installed. Although this price list varies somewhat in the write-up on different sizes, it averages about 10 per cent over the regular list price of the boiler. In other words, if the list price of a boiler is $500 we have instructed our salesmen to go ahead and quote an installed price of $550 on any job which may require a boiler of this particular size. Of course, on some installations, we lose money on this 10 per cent installation charge, but on other installations we make money, and up to date we find we have about broken even on installations of this type. Our sales-

(Continued on Page 97)

*Read for Mr. Reinhardt by Bennett Walker at twelfth annual convention of Natural Gas and Petroleum Association of Canada, Niagara Falls, Ontario.

MONTANA GAS RESERVE

CASPER, Wyo., Nov. 22.—Gas wells of Montana are capable of producing from 500,000,000 to 550,000,000 feet of gas a day and the life of the wells is estimated at 40 years, according to Dr. E. S. Perry, professor of geology at the Montana School of Mines, in an address before the Montana Society of Engineers.

Various fields have varying flow and depth, Doctor Perry said. At Shelby, wells are approximately 1,500 feet deep, while at Cut Bank they are from 2,200 to 2,500 feet deep. The Baker-Glendive wells are about 800 feet deep, while at Red Lodge they are 5,300 feet deep.

ALBERTA GAS STORAGE REPORTED SUCCESSFUL

CHATHAM, Ontario, Nov. 22.—In a recent address to the Lethbridge branch of the Engineering Institute of Canada, R. M. Gourlay of the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary discussed the natural gas waste in the Turner Valley and the operations of the company in recharging the sands of the Bow Island Field.

Mr. Gourlay stated that in the Turner Valley the waste gas burned last year after extraction of the naphtha was sufficient to supply all the present users in Alberta for 15 years. Comparing gas with coal on a heat value basis, enough gas is wasted daily in Turner Valley to equal nine train loads of high grade coal, each train of 50 cars and each car containing 40 tons. In a year the waste is equivalent to 3,285 such trains or 6,570,000 tons of coal representing, at $6 a ton, an aggregate value of about $40,000,000 a year. The value of the crude naphtha extracted annually is about $41,000,000.

The Canadian Western company is experimenting with the pumping of some of this waste gas into the old Bow Island Field. This field has an area of about 22 square miles and since its discovery in 1909 some 27 wells were drilled to depths ranging from 1,800 to 2,000 feet The field originally contained about 45,000,000,000 feet of gas of which about 38,000,000,000 feet were taken out in 12 years. By that time, owing to reduced pressure, there was danger of water seeping into the gas sands. In 1927 gas from the Foremost Field was turned into the Bow Island sands for a few days and 37,000,000 feet forced in, which held back the water. Success of this experiment resulted in the building this year of the larger plant for pumping Turner Valley gas into the Bow Island sands.

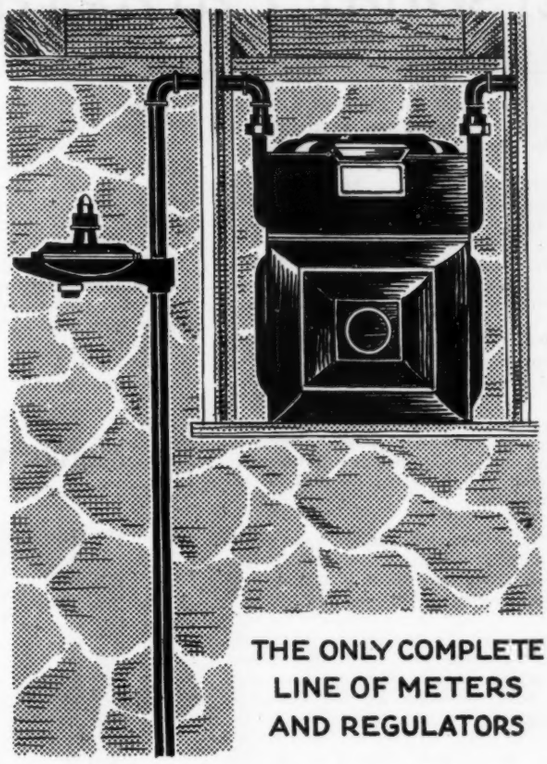
Three large gas-driven compressors were installed capable of compressing the gas up to 800 pounds per square inch and forcing the compressed gas into the old wells at the rate of about 3,000,000 feet a day. The gas in the main from Turner Valley is at about 75 pounds pressure and the pressure in the Bow Island wells when repressuring started was 264 pounds. Forcing the gas into the wells will ultimately increase this to nearly the original figure of 730 pounds. If the results of the present tests are satisfactory, the operations may be still further extended.

TENNESSEE'S NEW GAS FIELD

DICKSON, Tenn., Nov. 22.—Wood, Hake & Clouse have acquired the discovery gas well in the Harpeth Valley gas field in Dickson County, the Dickson Oil & Gas Co.'s No. 1 Oakley and 930 acres of leases surrounding it, and announce that they will drill an offset immediately. Wood, Hake & Clouse's deep test, No. 1 Harris, one-half mile north of the discovery well, found showings of gas in the Sunnybrook formations, and the well was drilling below 850 feet at last report. It is the intention of the operators to carry the hole down to the lower limestones of the Ordovician age, if necessary, to make a thorough test for oil.

MONTANA ASKS IMPORT TAX

CHATHAM, Ontario, Nov. 22.—Montana independent oil operators in conference at Great Falls have passed a resolution favoring the imposition of an import tax on natural gas brought in from Alberta. A tax of 6 cents per 1,000 feet, similar to that now imposed by Canada on natural gas imports, was asked.



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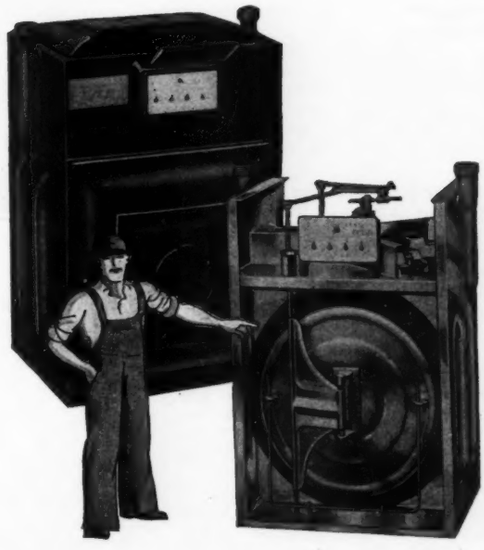
Inlet parts are above the gallery table in both type meters. All ports of EMCO A and B type meters are exactly interchangeable with each other, except the valve, valve seat and crank. Each meter must pass three tests to prove its accuracy before being passed by our inspectors.



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Interchangeability of Parts
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PITTSBURGH EQUITABLE METER COMPANY

Main Office and Works—Pittsburgh, Pa.

New York City, Chicago, Ill., Los Angeles, Calif., Tulsa, Okla., Dallas, Texas, Columbia, S. C., Salt Lake City, Kansas City, Mo., Seattle, Wash., Houston, Texas

Personal Paragraphs About Oil Men

E. V. S. Lowerre, scout for the Pure Oil Company, Big Spring, Tex., has motored to Atlanta, Ga., accompanied by Mrs. Lowerre.

* * *

Robert N. Ritchie, a member of the geological department of the Shell Oil Company of California, was married in Los Angeles two weeks ago.

* * *

Jimmie Flagg, former scout for the Gulf Production Company at Big Spring, Tex., is now scouting for the California Company at Corpus Christi, Tex.

* * *

Francis E. Powell, chairman of the Anglo-American Oil Co., Ltd., has returned to London, England, after a visit of eight weeks' duration to the United States.

* * *

G. H. McIntyre, in charge of the Texas-New Mexico division of the Continental Oil Company, is another hunter who is trying his luck in the New Mexico foothills.

* * *

W. N. Finnegan, assistant to the president of the Humble Oil & Refining Company, and David Frame, superintendent of production, spent several days in Mexico on business recently.

* * *

John D. Clark, scout for the Phillips Petroleum Company, Fort Stockton, Tex., and Miss Aileen Lorena Rawls of San Angelo, Tex., were married at the latter place, November 25, and left on a short honeymoon.

* * *

S. C. Caldwell has resigned as head of the land department for the Arkansas Natural Gas Corporation at Shreveport, La., and the duties of that office have been taken over by E. A. Stiller, head of the geological department.

* * *

E. G. Gaylord, chief petroleum engineer of the Standard Oil Company of California, is making a tour of the California Company's properties in Texas. The California Company is a subsidiary of the Standard Oil Company of California.

* * *

C. P. Bowie, supervising engineer of the San Francisco station of the Bureau of Mines, attended a meeting of the supervising engineers of the petroleum division of the bureau recently held at Bartlesville, Okla. He also made an extended trip through the Mid-Continent fields in connection with various phases of the bureau's work.

* * *

W. F. Ivers has been appointed manager of the New Braunfels division of the United Gas System, which includes the Southwest Distributing Company and the Southern Gas Utilities. Mr. Ivers, who has been engaged in public utility work for many years, has gone to the New Braunfels from the Dallas Power & Light Company.

* * *

Dr. R. D. Reed, chief geologist of The Texas Company of California, recently returned to Los Angeles from San Antonio, Tex., where he attended a meeting of the American Association of Petroleum Geologists, of which organization he is first vice president. Doctor Reed is also past president of the Pacific Association of Petroleum Geologists.

* * *

C. B. Stocken has been elected a director of Kern River Oilfields of California, Ltd., to fill the vacancy caused by the resignation of A. Mitchell, by reason of ill health, after 20 years' association with the company. Mr. Strickland was also elected a director of the Trinidad and Roumanian subsidiaries of the company.

* * *

Dr. R. C. Moore, head of the department of geology of the University of Kansas and chief geologist of Kansas, and a prominent member of the American Association of Petroleum Geologists, is making a speaking tour in Texas, lecturing at Texas Christian University, Fort Worth; Baylor University, Waco, and the University of Texas at Austin, Tex.

George Johnston, late of the Lago Petroleum Corporation, is dangerously ill in an Edinburgh hospital.

* * *

Stanley F. Mehling, after seven years' service with Shell-Mex, Ltd., at Shell Corner, London, W.C., has recently taken up an appointment with the Shell group in Trinidad.

* * *

Ben E. Lindsly, petroleum engineer, with the United States Bureau of Mines, Bartlesville, Okla., with Mrs. Lindsly, returned to their home November 14 after about five months spent in California. Mr. Lindsly has been assigned to special work in connection with the Kettleman Hills Pool unit operation agreement.

Men of the Industry

G. A. McBride

G. A. McBride, superintendent of the Pure Oil Company's refinery in Muskogee, Okla., has been in the oil business since he began to wear long trousers, and although Mr. McBride does not mention the precise date of this incident it is known to have been prior to the World War. He started out as a pumper at the age of 12 in the old fields around Coraopolis, Pa. After two years of this he started his career as a refiner with the Pittsburgh Oil Refining Company in Coraopolis, and remained with it for 10 years. Beginning as a pipefitter helper he wound up in charge of the lubricating and compounding department.

In 1905 Mr. McBride decided to go West, landing in Salt Lake City, Utah, where he became assistant superintendent of the Utah Oil Refining Company, just then building, and which has since developed into a big refinery owned by the Standard Oil Company of Colorado. He later became superintendent of this refinery. His next step was to take the assistant superintendency of the Great Western refinery in Erie, Kans. After two years at this refinery he became head of the compounding department of the Muskogee refinery, then owned by the Muskogee Refining Company, and later taken over by the Oklahoma Producers & Refiners Corporation and still later by the Pure Oil Company. He went from foreman of the grease and compounding departments to the assistant superintendent's position and in 1919 was made superintendent, the position he is still filling.

Mr. McBride is a Rotarian, and Thirty-second degree Mason, member of the Y. M. C. A. board,, board of directors of the Chamber of Commerce, an active member of the city council and in his spare moments an ardent golfer.

D. D. Christner, district geologist for the Continental Oil Company, is spending his vacation hunting in Zavalla County, Texas.

* * *

Lieut.-Col. S. J. M. Auld, M.C., O.B.E., Ph.D., has been appointed manager of the engine-building department of the Vacuum Oil Company, Ltd.

* * *

Harry Smith, who has been at his home in Petrolia, Ontario, on sick leave for several months, left recently via New York for the Colombia fields.

* * *

R. E. Witty, in charge of the Midland, Tex., office for The Texas Company, and Miss Pearl Wimberly of that city, were married at Midland, November 16.

* * *

Dr. V. Henny, European representative of the Universal Oil Products Company, Chicago, Ill., who has been visiting the United States, is returning to London this month.

* * *

H. H. Pier, chemist for the minerals division of the Louisiana Department of Conservation, was appointed city chemist of Shreveport, La., when the new administration took charge recently.

* * *

J. H. Turner and Chester D. Whorton, former geologists of the Independent Oil & Gas Company before its merger with the Phillips Petroleum Company, have opened an office in the Milam Building, San Antonio, Tex.

* * *

R. G. Greene, a member of the Union Oil Company's geological staff, has returned to Los Angeles from Canada where he conducted a geological reconnaissance trip which included the bagging of several moose and mountain goats.

* * *

Ed Griswold, petroleum engineer of the Continental Oil Company, Ponca City, Okla., is in the Big Lake Field, Reagan County, Texas, supervising the running of special tubing in the deep wells that the company owns in the field.

* * *

James S. Bennett, chief counsel for the California Department of Natural Resources, which is attempting to enforce the gas conservation law, recently addressed an informal luncheon meeting of the Petroleum Accountants Society, Los Angeles.

* * *

Walter Berger, formerly geologist for the Southland Royalty Company, and Ralph Cummings, land man for that company, which recently closed its offices at Fort Worth, Tex., have opened an office in the First National Bank Building, Fort Worth.

* * *

William H. McFadden of New Orleans, formerly senior vice president of the old Marland Oil Company, has been elected president of the Southland Royalty Company to fill the unexpired term of the late Press B. Lowrance, and J. K. Cleary, of Ponca City was chosen to take Mr. Lowrance's place on the board of directors.

* * *

Campbell M. Hunter, O.B.E., has returned to London, England, from his second visit this year to Canada and the United States, where he has been carrying out extensive geological investigations and completing the technical organization of a new company which will shortly commence operations in western Canada. This is the fifth summer Mr. Hunter has spent in western Canada.

* * *

H. M. Stalcup, vice president in charge of production; J. S. Freeman, assistant to the vice president; R. T. Lyons, vice president in charge of the land and lease department; A. L. Cashman, manager of Oklahoma division of the land and lease department, Skelly Oil Company, have returned from a duck hunting trip in the rice fields of Arkansas. The party visited W. I. Southern's camp at Stinking Bay, on the White River near DeWitt, Ark. They report the bag limit for each day's hunting.

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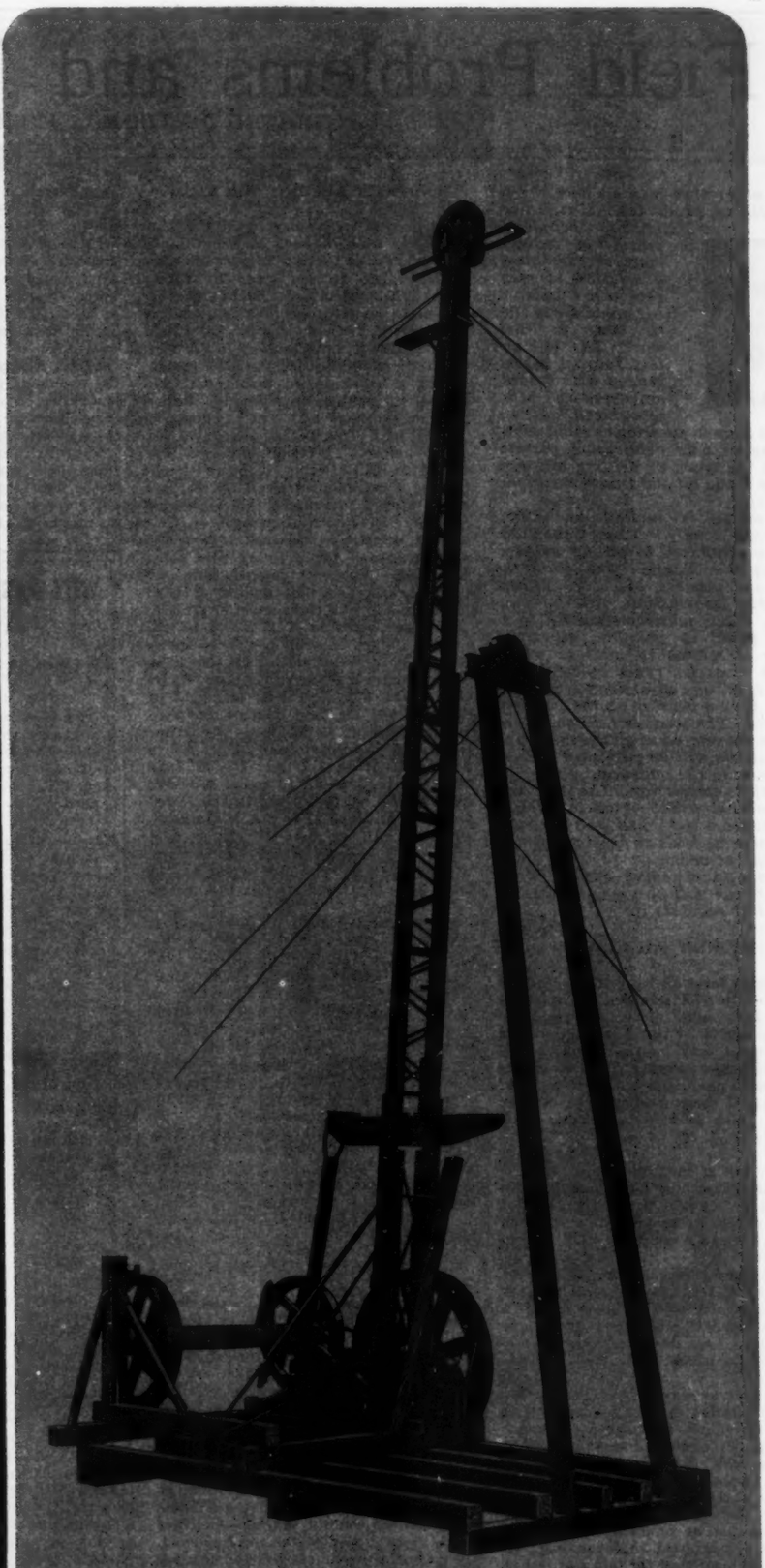


No. 3

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

INTERIOR SALT DOMES

We have some oil interests around the Louisiana interior salt domes and would like to have more information regarding their prospects. Coastal domes seem to be preferred over interior domes in exploration undertakings. Are the coastal domes more productive of oil? If so, why? Why do oil companies seem to hesitate to test these interior salt domes thoroughly?—J. O. E.

There are a number of interior salt domes in Texas and Louisiana that are known and they have been fully described in two papers presented in the bulletins of the American Association of Petroleum Geologists.

Dr. Sydney Power covers the interior salt domes of Texas in his excellent paper that was printed in Volume 10, Bulletin 1, of the A.A.P.G., and W. C. Spooner of Shreveport, La., describes the interior domes of Louisiana in Volume 10, Bulletin 3.

In a general way it has been found that the interior salt domes are not as productive of oil in commercial quantities as the coastal domes and it is therefore easy to understand why the greater number of plays should be directed to exploring coastal domes.

As to the reasons why interior salt domes are not as productive as coastal domes it is suggested that you refer to the articles mentioned for this is a rather involved question and these articles deal specifically with some of these interior domes and outline their geological features and if the papers are studied it is possible that you will then be able to apply these facts to those domes in which you are personally interested.

While salt domes located away from the Gulf Coast have been drilled and found dry there are a few that have been productive of oil in commercial quantities but the number has not been enough to influence the producing companies to drill interior domes when coastal domes are covered with leased acreage.

ANOTHER RECORD FOR F. C. F.

Answering an inquiry by "F.C.F." on the Field Problem page of The Oil and Gas Journal of October 23 you cite some drilling time records made by rotary crews in Oklahoma City, Hobbs and other oil pools. Operators in this territory (Shreveport, La.) cite a well drilled by a crew of The Texas Company in the Carterville Pool of Bossier Parish as establishing a better record than those mentioned, taking into consideration formations encountered and other factors.

This well, The Texas Company's No. 10 Wilkinson, Section 36-23-12, was drilled to 3,125 feet in 82 hours' actual drilling time, an average of 38 feet per hour through formations typical of this territory, no special equipment or tools of any description designed to expedite drilling beyond the ordinary rate being employed. Footange ranged from 8.8 per hour through lime and other hard formations to 77.7 through softer strata.

Drilling began at 7 a. m. June 24, making 15-inch hole 327 feet in 10 hours. Setting 10-inch and waiting for cement to set consumed 22 hours. Drilling under 10-inch began at 9 o'clock the night of June 25 and the next 8 hours averaged 70 feet per hour or 563 feet. Thereafter the time record ran: June 26, 7 a. m. to 6 p. m., 10 hours, 777 feet; 7 p. m. June 26 to 6 a. m. June 27, 10 hours, 362 feet; June 27, 7 a. m. to 6 p. m., 10 hours, 400 feet; 7 p. m. June 27 to 6 a. m. June 28, 10 hours, 88 feet; June 28, 7 a. m. to 6 p. m., 10 hours, 294 feet; 7 p. m., June 28, to 6 a. m., June 29, 10 hours, 238 feet; June 29, 7 a. m. to 11 a. m., 4 hours, 76 feet.

A. Julian was drilling superintendent and B. G. Williams, foreman. The crews were: Night, M. Williams, driller; A. E. Dutch, derrick man; J. H. Walker and L. A. Mason, helpers; M. J. Jones, fireman, and W. H. Ellington, fireman-helper. Day crew, Leon Garison, driller; C. E. Walker, derrick man; W. R. Trotter and E. R. Hines, helpers; O. Webber, fireman.

Other crews for The Texas Company have made similar records in Pine Island, Dixie, Zwolle and other districts of this division, data on which are being compiled by J. L. Shea, superintendent, to present a better picture of fast time in northwest Louisiana pools as a whole rather than one isolated instance.—D. H. B.

PARAFFIN IN CALIFORNIA

Is paraffin as much of a trouble in California oil fields as it is in others? Will you tell me please just what process takes place in the accumulation of paraffin in a well on gas lift? What are the constituents of oil well paraffin? How is steam used in removing paraffin? Is the steam method used successfully in California?—S. N. S.

Some California oil fields face troublesome, though hardly serious, situations as a result of paraffin accumulations. These accumulations contain varying quantities of oil, asphalt, wax, water and fine sand. The paraffin precipitates out of solution in the oil and deposits on the interior walls of the eductor tubing or in the annular space between the casing and tubing when the flow is up the outside of the tubing. If the waxy hydrocarbons are allowed to accumulate production of the wells falls off gradually and eventually stops. For example, the production from certain gas lift wells in the Santa Fe Springs oil field, California, fell off daily and stopped in two to four weeks, unless preventive measures were taken against the deposition of paraffin on the walls of the eductor tubing.

Paraffin troubles in gas lift wells generally result in the plugging of the upper parts of the eductor passage, where the cooling effect of the ascending gas is the greatest. As stated under the thermodynamics of the gas lift, the work done by a gas in expanding from a high to a lower pressure is always at the expense of heat. As the ascending gas does not expand isothermally it loses heat through conversion of internal energy into mechanical energy. The chilling effect of the expanding gas in the eductor passage lowers the temperature of the oil and causes paraffin to deposit on the walls of the eductor passage and flow lines.

Paraffin accumulations are removed from some gas lift wells by injecting steam with the input gas into the annular space between the tubing and the casing or into the tubing. The steam is usually injected at monthly intervals, or oftener when necessary. The steam and heated gas warm the tubing and casing in the well and are most effective in the upper part of the well where heat is needed most. This steam causes the deposited paraffin to fall away from the walls of the eductor passage, and the solid particles are ejected by the rising fluid. Although steam gives satisfactory results in certain wells in which the condensate from the steam does not form an emulsion with the oil, it is inadvisable to use it in wells where the water and oil emulsify and require treatment for their resolution.

One of the most satisfactory methods of removing paraffin accumulations from the eductor tubing in gas lift wells and the one commonly used in the California oil fields consists of heating the input gas in small heaters by steam. Heaters of certain types are connected in the gas line at the casinghead and heat the gas to 350° F. No wells have come to this bureau's attention at which the heaters need to be used continuously to prevent or remove the deposition of paraffin. Where gas heaters are employed continuously they are used for other purposes. At Cat Canyon, Calif., and elsewhere in the state where low gravity oils are produced by the gas lift, the input gas is heated continuously to lower the viscosity of the oil; otherwise, the oil could not be flowed by the gas lift. The accumulation of paraffin in the eductor passage in most wells in California where paraffin trouble is experienced is generally so gradual that the application of heated gas for 24 hours at monthly intervals prevents any appreciable loss in production through the reduction of the flow area of the eductor passage.

Information in regard to the gas lift method of flowing oil wells with special reference to California practice is given in Bureau of Mines Bulletin 323, by H. C. Miller, copies of which may be obtained for 30 cents from the superintendent of documents, Government Printing Office, Washington, D. C.

WHY WAS IT CALLED THAT?

SAMSON POST

"Who was the strongest man?"
"Samson."

And so the derivation of this term is seen almost at once, for in mechanics a samson post is any one of various posts used in a position where great strength is needed. In the oil field the name is applied to the post which supports the walking beam. "Sampson post" is a variant spelling, but orthographic authorities seem to agree that the other form is preferable.

WHY COOLING TOWERS COOL

It always has been a mystery to me how cooling towers in the oil field were able to cool the water sufficiently. It is easy to see how they do it when the outside air is cold, but not so easy to understand when the weather is scorching hot. I have heard the statement that water going through a cooling tower is made colder than the air that cools it. That does not sound reasonable. Is it true? Will you explain the principle of the cooling tower, please?—S. S. T.

The cooling of water in a pond, spray or tower goes on in two ways, Kent's Mechanical Engineers' Handbook explains. First by sensible heat (that is, heat applied so as to cause a rise of temperature) flow to air by radiation and conduction, which varies from zero to about 15 per cent of the total flow. Second, latent heat flow of air by evaporation. The latter is the chief effect. Under certain conditions, the water in a cooling tower can be cooled below the temperature of the atmosphere, as water is cooled by exposing it in porous vessels to the winds of hot and dry climates. In this case, the sensible heat flow becomes negative, i.e., from air to water.

The evaporation of 1 pound of water absorbs about 1,000 heat units taken from the body of water to be cooled. thus reducing its temperature. The rapidity of evaporation is determined first by the temperature difference between the water and air, second, by the vapor tension differential between water and air and, third, by the relative velocity between water and air. In ordinary air, the vapor present is generally in a condition corresponding to superheated steam, that is, the air is not saturated. If saturated air be brought into contact with colder water, the cooling of the vapor will cause some of it to be precipitated out of the air; on the other hand, if saturated air be brought into contact with warmer water, some of the latter will pass into the form of vapor. This is what occurs in a cooling tower, so that the latter is in a large measure independent of climatic conditions; for even if the air be saturated the rise in temperature of the atmospheric air from contact with the hot water in the cooling tower will greatly increase the water carrying capacity of the air, enabling a large amount of heat to be absorbed through the evaporation of the water.

The effect in all cooling towers is produced by a moving surface of water in contact with a moving current of air, thus promoting heat transmission from water to air as described above. The water surface consists of the total superficial area of minute spheres into which the liquid is divided, or of thin films into which it is spread out on fixed surfaces.

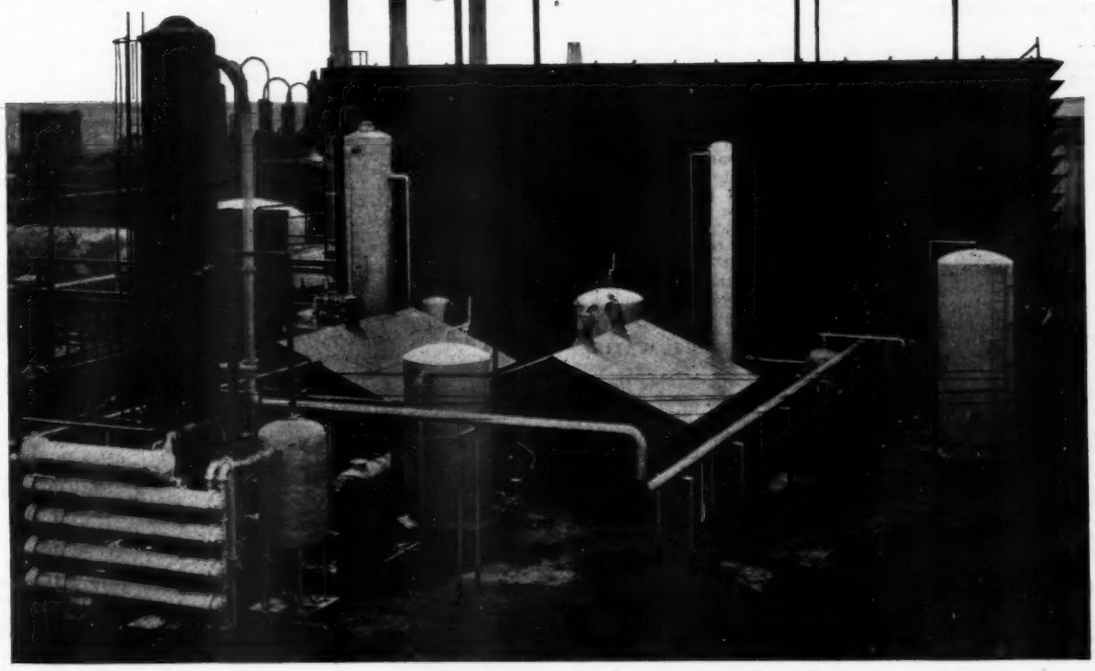
Cooling towers are of three types, based on the means employed to produce the air current: (a) Atmospheric towers in which the water is cooled by natural winds flowing cross current; (b) chimney towers in which the water is cooled by a counter current of air drawn through the broken up particles of water by means of a chimney superposed on the cooling surfaces, the draft being furnished by the column of air in the chimney being heated by contact with the hot water; (c) forced draft or induced draft towers in which a counter current of air is drawn or forced through the broken up particles of water on the cooling surfaces by means of a current of air forced through or induced in the tower by fans or blowers. When used in connection with steam condensers, the water produced by the condensation of the exhaust steam is sufficient to compensate for the evaporation in the tower, and none need be supplied to the system.

COMPLETE PLANTS

that function ~ SMOOTHLY
~ EFFICIENTLY
~ DEPENDABLY

DESIGNED ~ FABRICATED ~ ERECTED

to Meet the Conditions Imposed and Produce Exactly the Products Desired



An Absorption Vapor Recovery Plant by Petroleum Engineering, Inc., in a Mid-Continent Refinery.

PETROLEUM ENGINEERING, INC.

PHILTOWER BUILDING
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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

TETRAETHYL LEAD IN LUBRICATING OIL

Under some conditions ethyl lead in antiknock gasoline will find its way into lubricating oil. What effect could this have on the lubricating qualities of the oil?—S. G.

We have failed to find any extended discussion of investigations of tetraethyl lead and lubricating oil mixtures in the standard reference lists. A note in Automotive Industries, November 1, 1930, Page 661, may be of interest.

Tests to determine the seizing temperature of oil as affected by journal speed have been conducted for some time at the National Physical Laboratory in England. The oil is fed into the bearing on the unloaded side, at a constant rate, the excess oil escaping at the ends. With this oil bath lubrication under a load of 2,000 pounds per square inch the seizing temperature decreased continually as the speed of rotation was reduced, the rate of reduction becoming more rapid at low speeds. Within the speed range of 30-1,300 r.p.m. there was no indication of a sudden change at a critical speed. These experiments are being continued, according to the annual report of the laboratory for 1929.

The addition of tetraethyl lead had different effects on different lubricating oils. A well known brand of cylinder oil was distinctly improved, but with caster oil the addition of the dope reduced the seizing temperature from 203 to 107° C. In the case of a straight mineral oil supplied to the Air Ministry the minimum friction coefficient was lowered by the addition, but the seizing temperature was not affected. The two oils used in compounding this oil were then tried separately. The more expensive constituent, Pennsylvania stock, proved very constant as to seizing temperature and minimum friction after addition of the dope, and was unaffected by prolonged exposure to an oxidizing air blast while running during which the seizing temperature varied between 130 and 145° C. The cheaper constituent, Russian oil, gave a lower minimum resistance (0.0009 against 0.00125) after 35 hours of hot air blast run, while the seizing temperature rose from 73 to 135° C. After that the friction remained constant while the seizing temperature fluctuated. The same effect was observed when the hot air blast was applied before the run in the bearing; that is to say, this previous treatment reduced the initial period during which the friction decreased and the seizing temperature rose by 35 hours. The addition of tetraethyl lead without previous heat treatment had the same effect and did not further improve the heat treated oil. The above mentioned marked improvement in cylinder oil was not observed in any other case, and may be connected with the presence of some bitumen base oil.

HEAT AND FUEL IN CYLINDER

With increase of pressure there is rise in boiling point but compression produces heat. Can these equalize as to boiling point of the gasoline in a motor? Which of these conditions is the more important as to use of the gasoline in the cylinder?—B. N. P.

Only a very small part of the gasoline is brought to the boiling point at the instant of introduction into the cylinder but the more volatile part of the fuel is mixed with air and this mixture exploded. It must be remembered that under conditions in the motor cylinder that the boiling point of the fuel as it may be influenced can have little to do with its use. The heat of compression would probably always be much greater the decrease in volatility because of the increased pressure.

According to P. M. Heldt, compression aids vaporization. He discusses the subject in Automotive Engineering, 62, 435; 1930, March 15. Quantitative results are presented between the heat generated by compression and the increase in the quantity of heat required to vaporize a fixed quantity of gasoline, as resulting from the increase in pressure. The conditions as outlined, which are typical of engine operation under full load, showed that compression increases the heat required for vaporization to a degree equal to that needed to raise the temperature of the air in the mixture 41° F. The compression causes a generation of heat equivalent to that which would be required to raise the temperature of the air 382° F.

IODINE IN OIL FIELD WATER

Do you have reports showing the percentage of iodine in the water from deep wells either combined with oil or free from oil? Are such waters of any value for the material they contain?—W. E. C.

No extensive examination appears to have been made of the complete composition of oil field waters, especially such analyses that would show the quantity of iodine. It is quite generally the opinion in the petroleum industry that the deep waters associated with petroleum had their origin in ancient sea water and many analyses of these waters show a composition similar to that of ocean water.

In the Data of Geochemistry, by F. W. Clark, several authorities are quoted who have reported the quantity of iodine in sea water. It is reported in the form of calcium iodate equivalent to 2.5 parts per 1,000,000. Some analyses of the United States Geological Survey show 22.4 parts of iodine and 1,800 parts of bromine per 1,000,000. Water from the Sunset Field of California is said to contain about 20 parts of iodine per 1,000,000.

Ristle in Identification of Oil Field Waters, Technical Paper 404, United States Bureau of Mines, reports that Mrazec has suggested that water intimately associated with oil will contain the larger quantity of iodine.

Some of the oil field brines of California, long a source of annoyance because of the difficulty of disposing of them, have been found to be comparatively rich in iodine. Investigations of the pollution problem in the region about Long Branch indicated that the brines from the wells contained enough iodine for commercial production of iodine salts. An iodine recovery plant is reported to be in operation there and the results have been promising enough to warrant expansion of the plant.

Several plants making special products from oil well waters are in operation in Oklahoma but our information does not indicate that any iodine is recovered in these plants.

WATER ANALYSES PALMER SYSTEM

Water analyses are reported in several ways, some in grains per gallon, parts per 1,000,000 and others. Is there a standard? What is the Palmer system?—E. B. A.

There are several methods for reporting the chemical composition of water. It has been the practice for some years to report the quantity in parts per 1,000,000. This is convenient because the weight of the metric system, universally used by chemists, may be readily converted to parts per 1,000,000. For example, the milligram is one part by weight from a liter, or 1,000,000 milligrams, and therefore 50 milligrams per liter is equivalent to 50 parts per 1,000,000.

The statement of the substances found is not so uniform and many chemists may calculate numerous hypothetical combinations, substances as determined in ionic terms, or some form of percentage either from the original sample or from the solids found on evaporation. There is little objection to the system of reporting the results in ionic form but hypothetical combinations are not satisfactory in many instances; the principal objection being that faulty combinations may be made and the results cannot be reduced to the original form except through long and complicated computations.

The Palmer system was developed by Chase Palmer, Geochemical Interpretation of Water Analyses, United States Geological Survey, Bulletin 479, 31, 1911. The system has been used by geologists when studying surface waters. The results are stated as reaction values in per cent. Examples, as given by C. E. Ristle, Identification of Oil Field Waters, Bureau of Mines Technical Paper 404, illustrate the two systems. Both waters had the same geologic origin, but lie at different horizons that are several hundred feet apart:

ANALYSES OF TWO WATERS, PALMER SYSTEM

Reaction values, in per cent—	(1)	(2)
Calcium	2.51	2.22
Magnesium	3.75	4.04
Sodium	43.74	43.74
Chlorine	36.04	35.21
Sulphate	11.06	11.89
Carbonate	2.09	.31
Bicarbonate	....	2.59
Reaction properties, in per cent—		
Primary salinity	87.48	87.48
Secondary salinity	6.72	6.72
Primary alkalinity	....	....
Secondary alkalinity	5.80	5.80

It would appear that these waters are the same, but the ionic statement shows them to be different:

ANALYSES OF THE SAME WATERS, IONIC SYSTEM
(Parts per 1,000,000)

	(1)	(2)
Calcium	1,006	501
Magnesium	960	553
Sodium	20,945	11,314
Chlorine	26,620	14,049
Sulphate	11,076	6,432
Carbonate	....	105
Bicarbonate	3,683	1,177
Total solids	64,190	34,731

Many authorities have agreed that the ionic system is the simplest, most reliable, and less liable to be misleading than any system that has been suggested for reporting the chemical composition of water.

BOOKS FUNDAMENTAL OF PETROLEUM INDUSTRY

Could you supply a list of books which would constitute a library embodying the fundamental knowledge of the petroleum industry that one employed in the advertising and publicity department should have? I should like to have the library include: (1) History of the petroleum industry. (2) Exploration and production. (3) Refining and processing of gasolines, fuel oils, lubricating oils and natural gasoline. (4) Marketing of petroleum products. (5) Transportation. (6) Natural gas industry. (7) Utility, organization, operation, management.—G. S.

Several books are listed under each division. If only one book on the subject is to be purchased the one marked with an asterisk is suggested.

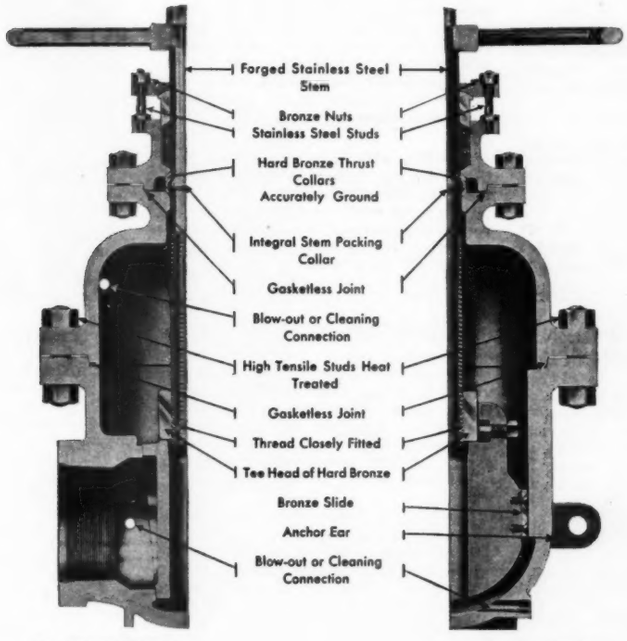
1. History:
   - *Evolution of the Oil Industry. Victor Ross. Doubleday, N. Y. 1920. $2.
   - Romance of American Petroleum and Gas. A. R. Crum and Dungan, A. S. 311-329 Tribune Building, N. Y. 1911.
2. Exploration and Production:
   - Practical Oil Geology. McGraw-Hill, N. Y. 1926. Dorsey Hager. $3.
   - Textbook of Petroleum Production Engineering. L. C. Uren. McGraw-Hill, N. Y. 1924. $6.
   - *Deep Well Drilling. Walter A. Jeffery. Gulf Pub. Co., Houston. 1925. $4.
3. Refining and Processing of Gasolines, Fuel Oils, Lubricating Oils and Natural Gasoline:
   - *American Petroleum Refining. H. S. Bell. Van Nostrand, N. Y. 1930. $5.
   - Motor Fuels. Eugene H. Leslie. Chemical Catalog Co., N. Y. 1923. $7.
   - Handbook of Domestic Oil Burning. American Oil Burners Assn., N. Y. 1928.
   - Practice of Lubrication. T. C. Thomsen. McGraw-Hill, N. Y. 1926. $6.
   - Recovery of Gasoline from Natural Gas. Chemical Catalog Co., N. Y. George A. Burrell. 1925. $10.
4. Marketing of Petroleum Products:
   - *Merchandising of Petroleum Products. R. H. Thomas. Homestead Co., Des Moines. 1929. $2.50.
   - Service Station Management. Jones. Van Nostrand, N. Y. 1922.
5. Transportation, including Pipe Line Operations:
   - *General reference books.
   - Piping Handbook. J. H. Walker and Sabin Crocker. McGraw-Hill. N. Y. 1930. $5.
   - All About Tank Cars. Standard Car Equipment Co., St. Louis, Mo.
6. Natural Gas Industry, including Marketing:
   - *Natural Gas Handbook. John C. Diehl. Metric Metal Works, Erie, Pa. 1927. $6.50.
   - Measurement, Compression and Transmission of Natural Gas. L. C. Lichty. Wiley, N. Y. 1924. $7.50.
7. Utility, Organization, Operation and Management:
   - *Accounting for the Petroleum Industry. Morland and McKee. McGraw-Hill, N. Y. 1925.
   - Oil, Its Conservation and Waste. J. H. Westcott. Beacon Publishing Co., N. Y. 1930.

It would be advisable to have, in addition, the general reference books:

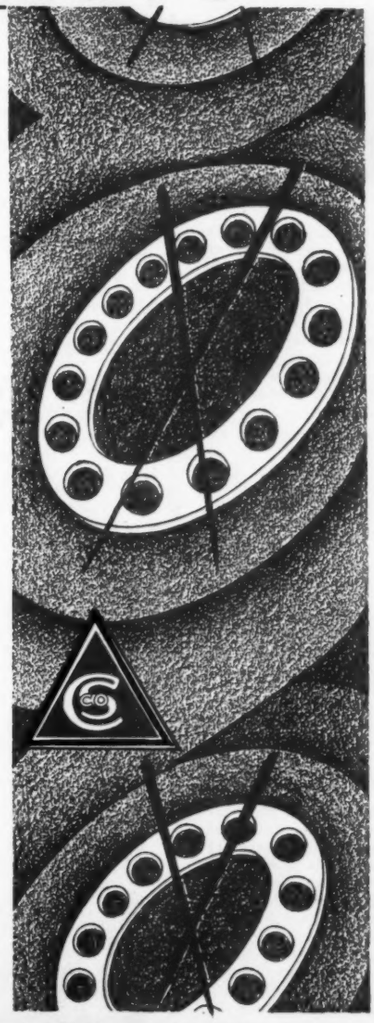
American Petroleum Industry. Bacon and Hamor. McGraw-Hill, N. Y. 1916.

Handbook of the Petroleum Industry. D. T. Day. John Wiley & Sons, N. Y.

THE NEW WESTCOTT DRILLING GATE VALVE HAS NO GASKETS



Cross Vertical Section — Longitudinal Section



Leaks, blow-outs, replacements and the inconvenience caused by valve gaskets can't happen in this new Westcott Valve. Tapered, ground joints give leakless, trouble-free service and eliminate the gaskets. The full, free floating (until seated) solid wedge with bronze slides, operates with a minimum af friction along a machined steel guide in the body.

"If Continental Sells It....There Is No Better" 9133

THE CONTINENTAL SUPPLY COMPANY
General Offices: ST. LOUIS
THE CONTINENTAL SUPPLY CO., LTD.
224 Traders Building, Calgary, Alberta, Canada
Export Offices: CONTINENTAL EMSCO COMPANY, INC. 74 Trinity Pl. New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2
CONTINENTAL EMSCO S. A. R., 7, Strada Eminescu, Ploesti, Romania

CONTINENTAL

Oil Field Equipment and Supplies

UNUSUAL CONSTRUCTION MARKS ALL-METAL GEAR

What is said to be the first all-metal variable speed transmission on the market has been announced by the Link-Belt Co. It is called the P.I.V. gear, the initials standing for "Positive Infinitely Variable."

Basically this new speed-change unit consists of two pairs of wheels of the opposed conical disc type, between which

a unique chain transmits power. The effective diameters of each pair of wheels can be altered under load to change the speed ratio without steps and without dependence upon friction. On changing speed the self-pitching chain rises in one set of wheels and descends in the other, so that while the input shaft connected to a motor or other source of power turns at constant speed, the output shaft is brought to the desired r.p.m.

Variable speed devices employing adjustable conical discs and belts with side friction contacts have been used for some time. The wholly original feature of the P.I.V. gear is its use of a positive chain drive to transmit the power. Radial teeth are cut in the conical faces of the driving discs, and the self-adjustable teeth projecting beyond the sides of the chain are arranged to engage positively the radial teeth of the discs.

The chain used in the P.I.V. gear is made up of a series of steel leaves or links with joints consisting of hardened steel pins turning in segmental bushings. There are no teeth on the inner surface of this chain. Instead packs of hardened steel laminations or slats extend through slots in the links at right angles to them, and project about one-eighth inch at each side of the chain. The individual containers which hold the packs of slats are secured in the opening of the links, but within each such container the slats are free to slide from side to side individually with relation to each other and adjust themselves to engagement with the radial teeth of the discs, over substantially the full range of diameters.

The angle of the slat ends, 30°, is the same as that of the conical faces of the wheels.

The teeth of the discs widen from the center outward toward the circumference, but are of uniform depth. They are so staggered relatively on each pair of wheels that the slats move back and forth into the teeth to mesh correctly as the chain comes into contact with the wheels. Self-pitching of the chain to any tooth width or wheel diameter is thus assured. At each engagement of the chain and wheels, the slats are regrouped within their separate containers, but do not slide nor move under working pull. Their movement in engaging with the wheels is complete before the load is applied.

All elements of the P.I.V. gear are built into and projected by a compact oil-tight housing, and are automatically splash lubricated.

A book, No. 1,274, illustrating and describing the Link-Belt P.I.V. gear, will be sent upon request to the Link-Belt Co., Philadelphia, Indianapolis or Chicago.

NOTES ABOUT TRADE LITERATURE

Nine new or improved Beaver tools are described in a four-page bulletin issued by the Borden Co., Warren, Ohio. The company states that in the last 18 months it has spent thousands of dollars expanding and improving the entire line of Beaver tools. Early in 1931 the new half-inch to 2-inch small portable pipe machine is to be announced.

A bulletin describing the Guiberson duplex tubing catcher with price list is being sent out by the Guiberson Corp., Dallas, Tex.

The Landis Machine Co., Waynesboro, Pa., is mailing bulletins descriptive of the Victor receding chaser collapsible taps and the Victor collapsible and solid adjustable taps.

The Neilan Co. Ltd. Los Angeles, has prepared a four-page bulletin describing the Neilan air-operated pilot reducing steam regulator.

Four bulletins issued by the E. B. Wiggins Tool Co., Inc., Los Angeles, Calif., are devoted to the Wiggins disc bits, Wiggins rubber-grip hose connections, Wiggins casing protectors and Wiggins "Approved Products."

The November Bridgeport Driller, published by the Bridgeport Machine Co., Wichita, Kans., contains a history of the Continental Oil Co. besides other interesting articles including "Sedgwick County's Oil Pools" and "History of Underreamers."

The Buyers' Guide to Nickel Alloy Steel Products, fall issue, is a 16-page booklet, published by the International Nickel Co., New York, containing a tabulation of sources of supply for the more commonly used forged, rolled, cast or drawn products made from nickel steels and alloys.

The November issue of the Vent, published by the Gilbert & Barker Manufacturing Co., Springfield, Mass., contains an interesting article on "The Super-Service Station," with illustrations of attractive filling stations operated by various oil companies.

AMERICAN METER WIDENS LABORATORY FACILITIES

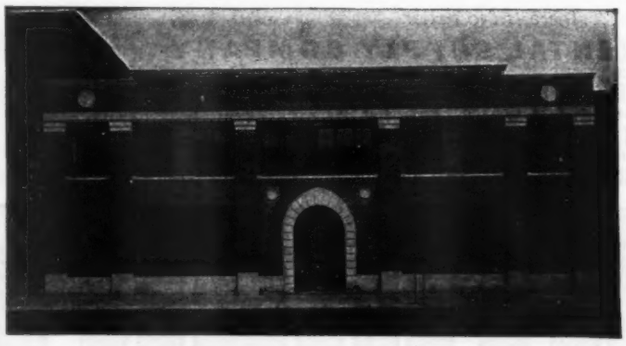
Additions to the floor space, equipment and personnel of the Albany laboratory of American Meter Co. have been completed. The laboratory now occupies an area of 950 square feet. It specializes in experimental and testing work relative to low-pressure measurement. Activities are co-ordinated with the company's research laboratory at the Metric Metal Works, Erie, Pa.

To maintain a uniform room temperature essential for proving tests, the Albany laboratory is equipped with an automatic temperature regulation and ventilation system. By this means stratification of the air is prevented and the temperature maintained within narrow limits.

The air supply for the provers is furnished by a low pressure blower, which draws the air from the vicinity of the provers and admits it to the provers at a pressure only slightly above atmospheric. A light non-volatile mineral seal oil is used in the provers as a sealing medium.

The testing and experimental work conducted in the Albany laboratory endeavors to add wherever possible to modern meter design and construction. It seeks also to establish additional facts that relate in particular to the behavior and to the commercial efficiency of the meter under conditions encountered in present day gas industry practice.

CHICAGO PNEUMATIC TOOL HAS NEW SERVICE STATION



An attractively designed and completely equipped service station has been erected by the Chicago Pneumatic Tool Co. at 570 East Larned Street, Detroit, Mich. The building is of reinforced concrete, faced with tapestry brick in assorted shades as a background for the limestone trim. The 75-foot front has two large plate glass display windows, each 13 feet wide and 7 feet high, containing the various CP products, illuminated at night by concealed display lights.

The building contains approximately 12,000 feet of floor space with two stories and a basement. The east half of the first floor of the building serves as a warehouse for compressors, engines and other heavy machinery. The west half houses the parts storage, a sound-proof test room, a 35-foot repair bench, shipping and receiving benches, delivery counter, etc. The office occupies the front half of the second floor, the rest being devoted to storage of complete tools.

This is one of 20 similar service stations maintained by the Chicago Pneumatic Tool Co. in important cities throughout the United States.

MEN KNOWN *in* THE EQUIPMENT FIELD

Dr. Victor O. Homerberg

Dr. Victor O. Homerberg, associate professor of physical metallurgy in the Massachusetts Institute of Technology, has been engaged by the Nitralloy Corp., 52 Broadway, New York, to serve as technical director.

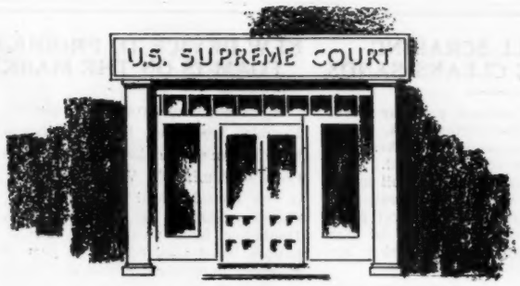
Doctor Homerberg received his bachelor of science degree in chemical engineering and doctor of science degree in metallurgy at the Massachusetts Institute of Technology. He is the author and co-author of articles pertaining to physical metallurgy or metallography and co-author with Doctor Williams of the text book "Principles of Metallography." He has been consulting metallurgist for manufacturing concerns and engaged in research pertaining to the nitriding process. He is chairman of the publication committee and of the subcommittee on nitriding of the American Society for Steel Treating.

The Nitralloy Corp. controls through assignment by Aubert & Duval, Fres, Paris, France, the United States patents issued to Dr. Adolph Fry, of the Freidrich Krupp-Aktiengesellschaft, of Essen, Germany, and many other patents and applications relating to the production of steels destined for nitriding and the art of nitriding.

NEW RECORDING INSTRUMENT

A new circular chart-recording instrument, identified as Type A, has been announced by the Westinghouse Electric & Manufacturing Co. These instruments are light and small; they include ammeters and voltmeters; and are made for switchboard mounting or as portable instruments. These instruments have numerous applications in industry. An example of their utility is their use for determining the most economical use of motor-driven machinery, the loading of motors, time of starting in mornings or after lunch hour, time of quitting, loss of time, and power required for different operations or depth of cuts.

The Harbison-Walker Refractories Co., Pittsburgh, Pa., has completed at 5,000-foot motion picture illustrating modern methods employed in the manufacture of refractories.



The Highest Authority on OIL Treating

The Tret-O-litE Process was the first commercially successful method of recovering oil from "cut oil," and has been used to recover millions of barrels of oil from an almost infinite variety of petroleum emulsions. Because of unequaled *experience*, coupled with extensive laboratory and manufacturing facilities, the Wm. S. Barnickel and Company organization is the highest authority in oil treating problems, just as an opinion from the U. S. Supreme Court is final in matters of law.

WM. S. BARNICKEL & COMPANY
Offices and Plant: Webster Groves, St. Louis County, Missouri

Tret-O-litE

Reg. U. S. Pat. Off.

Oil Field Equipment and Supplies

BAKER WALL-SCRAPING DEVICE CLEANS SANDS

The Baker wall scraper, made by Baker Oil Tools, Inc., Huntington Park, Calif., was designed to scrape mud or other coating from the walls of the oil sand. It is reasonable to assume that the oil sands become plastered with drilling mud, and unless this is scraped off it is never properly cleaned, even where there is high pressure in the sands. The Baker hydraulic wall scraper cleans the walls, exposing the sands in prime condition for production or for other purposes.

Use of the Baker hydraulic wall scraper according to the manufacturer affords these advantages:

1. Scraping gives a full-gauge hole, which makes it possible to land a perforated liner for production with ease.

2. The clean walls make it possible to bring in the well easier, and it will clean up in less time.

3. More production is assured by producing from the total area of the oil sand which has been exposed by proper scraping.

4. The proper scraping of the walls also insures a better cement job, because it exposes a proper substance or formation to which the cement can adhere.

After bottom water has been plugged back with cement, a string of casing set, and the well put on production for a time, it is not uncommon for the water to break in again. After drilling out the old cement with a bit, it is now possible, by using the Baker hydraulic wall scraper as an underreamer, to ream out all of the old cement and regain the original full gauge of the hole. The hole then may be plugged back again, or recemented and the well can be saved. A booklet illustrating and describing the device has been prepared by the Baker company.

LOS ANGELES OFFICE OPENED

The Victor Welding Equipment Co., manufacturers of acetylene equipment and welding supplies, has opened a direct factory branch in Los Angeles at 2032 South Santa Fe Avenue. The Los Angeles office will carry a complete line of acetylene and electric welding equipment, including hard-facing materials, diamond substitutes and general welding supplies. The repair department will be able to handle repairs and service on any make of apparatus. The personnel of the office includes Roy Norton, A. G. Thorsell and L. H. Bess.

NEW DEVICE TO PRODUCE FOAM IS ON THE MARKET

A new foam-producing device, the Foamite Duomixer, has been announced by the American LaFrance & Foamite Corp. of Elmira, N. Y. The device is used in the Foamite dual powder system. Designed primarily for stationary use, the Duomixer is a two-hopper device, one hopper being used for the A part of the Foamite dual powder and the other for the B part.

Because of the fact that the A and B parts of the powder are poured into separate hoppers, foam is not produced at the Duomixer as is the case with single powder Foamite generators manufactured by the company. Instead, the resulting solutions flow through twin pipe lines, terminating in mixing chambers or nozzle sets. With this set-up, the Duomixer may be located 1,500 feet from the risk to be protected. This feature, it is announced, is one of the principal reasons for the existence of the Duomixer and the Foamite dual powder system.

In many ways, it is pointed out, the dual powder system, utilizing the Duomixer, will resemble the Foamite two-solution system which protects millions of barrels of petroleum products all over the world. It incorporates many of the features of this system, such as twin pipe lines, mixing chambers, hydrants, control valves and a centralized point for the discharge of the solutions.

NEW TYPE PIPE CUTTER ANNOUNCED BY BORDEN

Following the announcement of the new Nos. 8 and 8R Beaver "Four-post" die stocks for threading 1 to 2-inch pipe, and the two new Beaver three-way die stocks for smaller sizes of pipe, the Borden Co. of Warren, Ohio, announces the new Beaver 2½ to 4-inch square-end pipe cutter.

This tool incorporates the Beaver principle of self-feeding knives, is gear driven and has a driving pinion in front as is the case with the companion tool, the No. 41 Beaver die stock. This makes for easy interchangeability between pipe cutter and die stock when used with power drives.

A special grade of nickel semisteel is used in the main housing and cover plates —insuring strength and rigidity.

A single wrench is used for centering the tool on the pipe by means of centering V-blocks and the same wrench is used to place the knives under compression. In case this socket wrench is lost, any standard wrench can be used.

The knives are of the Beaver design with a guide running ahead of the cutting edge to prevent breakage. Operated by the new Beaver power drive with universal motor, the No. 104 Beaver square-end pipe cutter cuts off 4-inch pipe in approximately 2½ minutes and smaller sizes in proportion.

OWENS IS ENGAGED BY CATERPILLAR TRACTOR

H. B. Owens

H. B. Owens for 15 years in the producing end of the oil and natural gas business has joined the Caterpillar Tractor Co. to develop this field for "Caterpillar" tractors. Mr. Owens has worked with various oil concerns including C. F. Camp Co., H. W. Cardwell Co., and the Empire Oil & Refining Co. His new title is supervisor of industrial sales.

BYERS CLEAN-UP SHOVEL WEIGHS LESS THAN 10 TONS

A convertible three-eighths-yard, three-quarter-swing clean-up shovel weighing less than 10 tons is announced by the Byers Machine Co., Ravenna, Ohio. For pipe line building this unit, called Byers Model 40, is specially adapted to clearing right of way, digging deep cuts and river approaches and with trencher attachment it digs blasted rock. It is similar to Byers full-circle models in its machinery arrangement. The direct type of drive from motor to jackshaft by silent chain and then to each working operation is exactly the same in principle as is found on the Byers one-half, three-quarter, 1 and 1¼-yard machinery decks.

This machine has a 36 horsepower motor which develops a powerful single line pull at 140 feet per minute. A two-speed crawler is reported to have climbed up a 40 per cent grade on a recent demonstration. The Model 40 is expected to operate within weight requirements on highways, do miscellaneous and clean-up work around supply yards and on big jobs. Operation and maintenance is said to be especially low because of special design features.

APPLIES COLD COAT ON OIL OR GAS PIPE LINE

With the Sullivan GV pipe line painter for oil and gas lines the work formerly accomplished by 25 or 30 men by hand is done by six or seven men with the aid of compressed air in the same time and with a saving in the amount of pain used. The coat may be applied cold.

The paint and pressure tanks are carried on skids which form an extension of the compressor base. The entire rig is mounted on the contractor's motor truck for convenience in moving.

A multiple-tip spray gun delivers the paint onto the curved surface of the pipe without wasting paint. This spray gun does not depend solely upon injection to project the paint on the surface, but employs direct air pressure in the paint container itself. The air under pressure forces the paint through the hose line direct to the gun, materially curtailing the volume of air needed for forming the spray. The air pipe reaches to the bottom of the paint tank. The air passing up through the paint not only agitates the paint, keeping it at uniform consistency without settling; but owing to the heat of compression, the paint mix is kept constantly at a temperature that permits uniform operation both winter and summer.

The gun consists essentially of a pipe curved to fit the curve of the pipe line. In it are provided five jets or tips through which the paint is discharged at right angles to the surface of the pipe. The operator walks rapidly from one end of the length of pipe to the other, coating the surface as he advances. When the end of the pipe is reached, the length is devolved or rolled one-third around and the painter walks back to the other end of the joint, when the pipe is again rolled, and the final third of the length is painted. This leaves the operator at the further end of the joint ready to start on the next length.

Cooper-Bessemer Type GA 2-cycle drilling and pumping engine, equipped with Timken Bearings on the crank-shaft and governor shaft. Built in 30 and 40 H.P. sizes.

Cooper-Bessemer Type GA Two-Cycle Gas Engines Have Timken-Equipped Crank-Shafts

When a manufacturer sees fit to entrust the performance of a new piece of machinery to Timken Bearings after several years' experience with them in other equipment, it is evident that both he and the users of his products are thoroughly "sold" on Timken advantages.

This is the situation with The Cooper-Bessemer Corporation, Mount Vernon, Ohio, builders of gas engines and compressors.

As explained in their own words, "In more than three years' experience with Timken Bearings in our Type-16 engines, we do not know of a single case of bearing trouble of any kind. The same applies to our Timken Bearing Equipped four-cycle pumping engines which have been running for the past two years. Because of this experience we feel justified in adopting Timken Bearings as standard for main bearings and governor shaft on our Type GA Engines."

Builders of all types of gas and steam engines for oil-field service have adopted Timkens for crank-shafts, governor shafts and other positions. They have found that not only is friction eliminated, power increased and lubrication economized, but through the exclusive combination of Timken tapered construction, Timken positively aligned rolls and Timken-made steel, shafts are rigidly held in alignment, whip prevented, vibration minimized and engine life indefinitely prolonged.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

Gas Wells Dominate Eastern Fields

One in Kanawha County, West Virginia, Estimated Good for 3,000,000 Feet. Southeast Ohio's Largest Also Gasser

By Staff Correspondent

PITTSBURGH, Pa., Nov. 24.—The largest well completed in the eastern fields for the past week was the United Fuel Gas Co.'s No. 4,267 on the Sunday Creek Coal Co.'s tract in Cabin Creek district, Kanawha County. It was brought in at a depth of 2,293 feet, the Berea sand, and is showing for over 3,000,000 feet a day. In southeast Ohio, the largest well was also a gasser. It was the test of Park Bowser and others on the Charles Wood farm, near Albany, Section 20, Alexander Township, Athens County. It is estimated good for 1,500,000 feet a day from the grit at 1,446 feet.

A fair well completed in southeast Ohio during the past week was a 500,000-foot gasser and this was the test of the Gas Producing Co. of Ohio and others on the Emmet Swingle farm, in the north center 40 acres of Section 17, Brush Creek Township, Muskingum County. It was drilled in the Clinton sand at 4,039 feet.

In Ashland County, the Great Lakes Oil Co. drilled No. 5 on the C. I. Sellers farm, Section 9, Lake Township, in the Berea sand at 687 feet and after shot, it is showing for about an 8-bbl. pumper. In Section 21 of the same township, the Gold Crown Oil & Gas Co. completed their No. 4 on the Harry Horn 33 acres in the Berea sand at 654 feet and it is also an 8-bbl. pumper after shot. In Coshocton County, Stephenson Brothers completed a second well on the M. L. Noland farm in the SE Section 12, Pike Township. It was drilled in the Clinton sand at a depth of 3,326 feet and in the second 24 hours after shot produced 20 bbls. and it will probably settle down to a 4-bbl. pumper.

In the limits of the pool in Wheeling Township, Guernsey County, there were two additional wells reported. The Preston Oil Co. completed No. 4 on the Amanda E. Robinson farm, NE Section 12, which after reaching the Niagara lime at 3,488 feet produced 28 bbls. the first day natural. In NE, same section, same company completed No. 3 on the C. C. Wilson farm in the Niagara lime at 3,561 feet and it made 12 bbls. natural the first day.

Licking Disappointment

A completion in Licking County was a disappointment and it was the E. J. Edmonds test well on the O. E. Wise farm in Section 12, Madison Township, which was drilled in the Berea sand at 609 feet. The well had a little showing of oil but not to warrant putting to pumping and it was pulled out and plugged. In Noble County, Ogle and Ogle completed their No. 18 and on the Benj Corp. tract, SE Section 6, Jefferson Township, in the Buell Run sand at only 168 feet and it is a very light pumper, having made one-quarter of a barrel the first 24 hours natural. The Gas Producing Co. of Ohio drilled a test well on the M. T. and F. C. Moore farm in the SE Section 18, Harrison Township, Perry County. It went to the depth of 3,550 feet and in the Clinton sand and was a dry hole.

Washington County was active with seven completions, four of which were dry holes mostly in the shallow sands. On Whipple Run, Lot 125, Fearing Township, T. N. Curtis and others completed their No. 7 on the Robert Biehl farm at 621 feet and in the Peaker sand. It made 2 bbls. the first day after shot. Near Warner, and in Lot 40, Salem Township, Bay and Weppler and others completed their No. 2 on the Chris Lauer farm in the Buell Run sand, depth 380 feet, and it is showing for a 1-bbl. pumper after shot. In Section 8, Palmer Township, Robert W. Turney and others completed No. 13 on the Myron E. Leasure farm in the Peaker sand at 530 feet and it is showing for 1 bbl. natural as a pumper. In Section 26, Palmer Township, H. F. McTaggart and others completed a test on the Mrs. Clara Reed farm, and it produced 100,000 feet of gas a day initial from the Maxon 500-foot sand at 1,161 feet. In same township, but Section 7, the Swingle Oil Co. drilled a test on the Clarence McGrew farm in the First Cow Run sand at 660 feet and it is a dry hole. In Section 8, Palmer Township, the Pure Oil Co. had a similar result in their No. 31 on the B. Freed farm, which was completed in the Maxon 500-foot sand at 943 feet. Near Whipple, Lot 51, Salem Township, the Morning Star Oil Co. completed their test in the Buell Run sand and on the Charles Gearhart farm at 447 feet and it was also dry.

Drilling in Ohio

There are several tests at various stages of drilling in York Township, Athens County, and among them are the following: The Union Drilling & Producing Co. have reached 3,100 feet in a test on the Charles Kontner farm. The Gordon Oil Co. is down to 2,470 feet in a test on the Frank Patton farm in Section 23. In the same section the Hocking Valley Drilling Co. have reached 2,350 feet in a test on the Nelson Lumber Co.'s property and the Union Drilling & Producing Co. are drilling at 800 feet in a test on the W. F. Powell farm. In Section 23, Afe Snyder has reached the 800-foot level in his test on the Jackson lot. In the same section, the Columbia Oil & Gas Co. have No. 2 on the Sunday Creek Coal Co.'s tract and it is down to 700 feet and the Wittmer Oil & Gas Properties are building a rig for No. 2 on the Baird Brothers Co.'s property.

In Hocking County, the Kackelmacher estate is drilling a test on the Carshner and Scholl property in Section 14, Falls Township, and have reached 400 feet. In Section 35, Benton Township, Henry Scholl and others are down to 2,375 feet in a test on the Mary E. Woodyard farm. Close by the drilling in York Township, Athens County, the Associated Oil & Gas Co. are building a rig on a location on the A. L. Jones farm in Section 4, Starr Township, Hocking County.

In Licking County, the Preston Oil Co. is drilling No. 2 on the Edward Goldsmith farm, Hopewell Township, and Lot 18. It is down to 2,350 feet. In Section 7, Hanover Township, the Edward N. Everett Co. have reached 1,800 feet in their No. 4 and on the Felix Claypool No. 2 lease. In Muskingum County, W. R. Crawley and others are nearly in the sand in their No. 3 on the G. L. Watson farm, Section 16, Brush Creek Township, and it is now drilling at 3,700 feet. The Ohio Fuel Supply Co. is down to 1,200 feet in a test on the J. H. Miller farm in Section 18, of the same township. In Perry County, the Atha Oil Co. have their No. 17 and on the Melick Brothers farm in Section 20, Madison Township, down to 1,900 feet.

Off the edge of the pool in Hopewell Township, Muskingum County, the Pure Oil Co. have drilled in its No. 3 on the J. P. Harkness farm, and it has a very light showing of oil and has not as yet been shot.

WEST VIRGINIA

Occasionally there is an oil well completed in West Virginia and this week there were two, both of them small producers. In Sherman district, Boone County, the Pure Oil Co. completed its No. 39 on the LaFollette, Robson and Prichard Tract B at a depth of 3,178 feet and it is showing for a 6-bbl. pumper after shot. On Arnolds Creek, Central district, Doddridge County, Piggott and Shinn completed a test well on the J. R. Hively farm, and drilled through the Gordon sand at 2,520 feet; it is showing for a 1-bbl. pumper.

There were three wells completed in Calhoun County. In Washington district, the Eastern State Oil & Gas Co. drilled a test well on the Lubana J. Jarvis farm in the Salt sand at a depth of 1,265 feet and it is showing for a small gas well. In Lee district, K. C. Simmons completed his test on the Dorothy J. Brannon farm in the Injun sand at 2,367 feet and it is also a small gasser. In the same district, Godfrey L. Cabot drilled his No. 707 on the J. P. Wagner farm in the Berea sand at 2,304 feet and it was dry and is being abandoned.

In Henry district, Clay County, the Pure Oil Co. completed a test well on the C. U. Summers farm in the Big Injun sand at 2,056 feet and it will make a small gas well. On Rock Camp Run, DeKalb district, Gilmer County, the Philadelphia Natural Gas Co. completed its No. 7,568 and a test on the M. S. Linger farm in the Injun sand at 1,975 feet and it is a light gasser.

In addition to the good gas well reported above, there were two other fair gas completions in Kanawha County. In Cabin Creek district, the Winifrede Co. completed two wells on its own property, its No. 3 drilled to a depth of 1,689 feet is showing for 200,000 feet a day, and its No. 5 is showing for 500,000 feet a day from a depth of 1,765 feet.

In Lewis County, Fred Flesher completed a test on the Mary Flesher farm in Hackers Creek district and in the Fifth sand at 2,710 feet and it is a light gas well. On Canoe Run, Court House district, Lewis County, Charles Moran drilled his test on the George Allman farm to a depth of 2,900 feet and in the Fifth sand and it is a very small gas well. In Ritchie County, the Reno Oil Co. completed a gas well in its second test on the C. M. Cox farm in Union district. It was drilled in the Big Injun sand at 2,037 feet.

In Wayne County, the Ohio and Kentucky Gas Co. drilled a test on the J. P. Staley farm in Ceredo district to a depth of 3,805 feet and it was dry in all formations. In Wetzel County, the Pittsburgh and West Virginia Gas Co. drilled its No. 5,245 on the W. E. Higginbotham farm, Church district, deeper to 3,601 feet and it is a dry hole. In the same district, the Manufacturers Light & Heat Co. completed its No. 3,450 on the John C. Haskins farm at 3,534 feet and it is also a dry hole.

Drilling in West Virginia

In Ellsworth district, Tyler County, the Manufacturers Light & Heat Co. has a rig standing for its No. 3,449 and a test on the C. L. Parks farm. In the same district a local partnership has reached 1,550 feet in a test on the Kenner Boreman farm. The Manufacturers Light & Heat Co. drilled its No. 1,969 on the J. O. Sole farm, Ellsworth district, deeper from 1,969 feet and have reached 2,135 feet and shut down cleaning out for a test. In McElroy district, the Manufacturers Light & Heat Co. is down to 3,150 feet in its No. 1,300 on the T. J. Woodburn farm. In Union district, Hall and others have a location for a test on the S. E. Buchanan farm, and Morgan Brothers are ready with a location for their second test on the J. B. Dancer farm. Berkley and Shrader have temporarily shut down their test on the William Sandy farm in McElroy district.

In Proctor district, Wetzel County, the Midland Oil & Gas Co. has shut down at 650 feet in a test on the J. W. Price farm and has a rig standing on the Melvin Baxter farm for a test. In Church district, the Hamilton Oil and Gas Co. is down to 1,430 feet in a test on the Lomie Hunt farm. In the same district, D. W. Null and others are close to the sand in their No. 3 on the W. G. Snodgrass farm. The Manufacturers Light & Heat Co. has a rig up for No. 3,458 on the J. D. Horner farm, Church district. In the same district, the Pittsburgh & West Virginia Gas Co. is drilling at 520 feet its No. 5,400 on the Aaron Furbee farm.

Putnam County

In Putnam County, the Henderson Development Co. has spudded in and started drilling a test on the James W. Nicholas heirs' farm in Curry district. In Carroll district, Lincoln County, the Hamlin Natural Gas Co. is rigging up for a test on the James Holton farm and is clearing locations for No. 2 and No. 3. In Jefferson district, the Jefferson Gas Co. is rigging up for a third well on the Richard Miller farm, and is ready with a location for a fourth. In the same district, A. F. Morris, trustee, is rigging up to drill a test on the D. W. Lovejoy farm, and Black and Wilkerson are drilling their test on the Delia Mullins, trustee property and have reached 800 feet. Again in Jefferson district, the United Fuel Gas Co. has a rig standing for a test, No. 4,201, on the A. I. Dotson farm. This company's well, No. 4,275, on the Horse Creek L. & M. Co. property is down to 1,650 feet. The Berea in this district is reached at about 2,300 feet. The Conly Gas Co. is about in the sand in its second test on the William Adkins farm, Jefferson district, having reached 2,200 feet. In Union district, E. R. Cameron is rigging up for a test on the Julia Breedlove farm. In the same district, the Woodyal Gas Co. has about completed its second well on the Luke G. Adkins farm and in the Berea sand, and is reaching the Berea sand in its second test on the Ambrosia Adkins farm. The same company's No. 2 on the R. L. Stowers and Plumely farm is in the sand and waiting on a shot.

In Wayne County the Wayne United Gas Co. has reached 1,720 feet in their No. 40 on their own property in Lincoln district. The Chartiers Oil Co. are approaching the sand in their second on the Anna Streuber farm in Butler district. In Mingo County the Wayne United Gas Co. is down to 1,450 feet in their No. 44 on their own property in Harvey district. In the same district, the United Fuel Gas Co. are drilling two wells on the Central Trust Co. property, their No. 4,237 at 2,240 feet, and their No. 4,236 at 1,350 feet.

Fayette County

In Fayette County, G. L. Cabot is cementing to shut off water in his No. 3 on the Mecca Coal Co. property, Kanawha district, after reaching 2,703 feet. In Falls district, the same operator is down to 2,601 feet in his second test on the W. C. Newman farm. In Trap Hill district, Raleigh County, G. L. Cabot has a rig up for a No. 3 on the Beaver Coal Co. tract, and is drilling his No. 4 on the same property in Slab Fork district at 2,420 feet. In Arbuckle district, Mason County, the Federal Fuel Corp. test on the J. W. Williamson farm is down to 3,550 feet, and in Cologne district and on the G. L. Thornton farm they have reached 4,006 feet in a test.

In Mannington district, Marion County, S. N. Elliott is drilling his No. 4 on the Arlie T. Hibbs farm at 3,025 feet and reached to top of the 30-foot sand at 3,005 feet with a show of oil at 3,020 feet. In the same district, Sutton Brothers in drilling their No. 2 on the L. S. Thomas heirs farm deeper have reached 2,515 feet, the bottom of the Big Injun was found at 2,275 feet. In Grant dis-

(Continued on Page 97)

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MALONEY ALONE

ELECTRICAL CORONA DISCHARGE EMPLOYED

(Continued from Page 38)

discharge not only are the recoveries lower but the antiknock values of the finished gasoline are less.

In the experimental plant we have been content to operate a noncycling plant as the data obtained have given a good idea of just what takes place.

The cycle of operations of this plant is as follows: Charging stock is pumped cold through the primary heater. Condensates or throw-backs are taken from three parts: (1) Bottom of vaporizor; (2) bottom of reaction tubes and vapor preheaters; and (3) bottom of dephlegmator.

Tray Dephlegmator Used

As this plant was built some six years ago when the bubble or fractionating tower was not in as general use as today it was equipped with a tray dephlegmator and the cut taken from it was not as close as it should have been and our crude gasoline has carried more heavy ends than should have been the case with a proper fractionating tower.

These hot throw-backs or condensates are passed through a cooler and returned to the stock tanks and rerun on the single cycle basis.

By this method of operation we of course have been able to find that the cracking takes place in the reaction tubes and not in other parts of the system. We have also been able to determine the effect of the operation on that part of the charging stock that has not been turned into gasoline and find that after passing through 40 or more times the gravity has practically remained constant. On some kinds of charging stock—say a paraffin base gas oil, the gravity has been lowered not more than 3° Be. That is, a 32° Be. gas oil after long continued cycling will be 29° Be.

In the case of some Michigan topped crude the gravity was actually raised 1° Be. after three times through the plant.

At no time has there ever been a tar or road oil produced and carbon has been found in the reaction tubes or vapor preheater only when there was imperfect vaporization or heat got out of control, causing a hot spot in the system.

After five years of experimental operation and the production of over 30,000 gallons of usable motor fuel there have been taken from the plant not over six small mason barrows full of amorphous carbon.

Reaction tube recoveries have varied from 16 to 25 per cent, depending somewhat on the heat control and the temperature of the vapors leaving the reaction tubes. This for a single pass through.

Operating Pressure Under 2 Pounds

The operating pressure is less than 2 pounds, the gauge varying generally from 8 ounces low to 1 pound and 14 ounces high.

The temperature of the vapors leaving the reaction tubes has been from 900° F. low to 925° F. high.

Charging stock for the runs has never been bought on any but one specification and that was price. How cheap is it, and not how good is it, has been our specification.

It was early found in handling vapor-phase gasoline that while we could produce a high antiknock gasoline the crude gasoline made contained undesirable elements.

It was noticed that when customary methods of treatment were used not only were the undesirable constituents removed but a great deal of the antiknock value of the gasoline was destroyed.

We were then apparently faced not only with the need of a new process for cracking in the vapor-phase but we were also faced with the problem of so treating the crude gasoline as to turn it into a motor fuel without undesirable elements and with the reduction of the desirable elements kept to a minimum.

Crude vapor-phase gasoline contains, by virtue of the method of cracking, a great many gums in the forms of diolefins as well as a high percentage of olefins. Sulphuric acid, while it apparently removes the undersirable diolefins at the same time removes some of the olefins. It has been found that destruction of the olefins takes away from the ultimate value of antiknock feature of the fuel. Ordinary steam distillation does not improve the value of the product, but has been found to be detrimental to the end product, when rerunning crude vapor-phase gasoline, and therefore could not be used. Even when working with ordinary methods of rerunning through polymer towers gums were increased rather than reduced. The only standard operation that could be used, the doctor solution treatment, was unnecessary as the gasoline is low in sulphur and shows a doctor sweet test when refined.

Accepted Methods Discarded

We were forced therefore to discard all of the generally accepted methods of treatment and work on absolutely new lines. In general the new operation is as follows:

Crude gasoline is taken from the condenser through the fractionator or bubble tower with the Hempel distillation of the product showing approximately 10 per cent bottoms left over after the endpoint gasoline has come over. Roughly if a 437° F. endpoint gasoline is desired the endpoint of the crude gasoline should be about 450° F.

The crude gasoline is conveyed to rundown tanks and treated chemically. This treatment is generally done with a mixing pump, the chemical being added in the suction of the pump, under pressure, in a properly controlled and prescribed amount.

No air or mechanical agitation is needed and thus the loss of light is easily controlled. As both pump suction and discharge are under the liquid level of the run-down tank the loss of light is kept to a minimum.

The treated oil is allowed to digest for a period of 12 to 20 hours permitting some of the sulphur and gum combinations formed to settle into the bottom of the tank from which they can be withdrawn.

After digestion the treated oils are rerun through a rerun still, the vapors being taken into close and intimate contact with a catalyst. Gums and sulphur compounds deposit on the catalyst, which can be cleaned for further runs.

When we first developed this system we used a batch process, as it seemed necessary to have the catalyst in both the liquid and vapor-phase while rerunning.

Pipe Still Operation Feasible

Later developments have shown us, however, that it is entirely feasible to operate with a pipe still on a continuous basis, passing the oil from the pipe still into an expanding chamber in the bottom of a fractionating tower, the light vapors passing upward though the catalyst, thence through the ordinary methods of fractionation to the condensers and rundown tanks. After rerunning the finished gasoline is given a caustic work and is ready for the sales tank.

Gasoline treated by this method is color and unsaturate stable. Gums are stabilized in that they do not increase appreciably in storage, but will increase about six times when shaken with oxygen for a period of 10 days. Sulphurs are well below the requirements of the United States Navy for motor fuel.

Color stability is such that gasoline treated by this method and exposed to the sun for over three months has dropped not more than three points in the Saybolt scale. A sample was placed in a well stopped glass bottle, set out of doors in hot summer sunlight and was taken indoors only when it was desired to run a color test. Other samples have been kept in 4-ounce glass sample bottles in the plant office in diffused light for a period of two years and have shown, to the eye, no color change and no deposit of any kind in the bottle.

On small plant operation handling 4 bbls. of gasoline at a time on a batch system the cost of treatment is approximately 15 cents per barrel.

Results of Plant Operations

It may be of interest to give the results of some actual runs obtained from the plant giving not only data relative to the charging stock but also relative

both to the crude gasoline made and the finished product from this crude gasoline:

PLANT RUN NO. 82—JULY 21, 1930
Charging Stock—Paraffin Base Gas Oil
Engler Distillation

A.P.I. Gravity	33.1
I.B.P.	439° F.
5 per cent	478° F.
10 per cent	494° F.
15 per cent	506° F.
20 per cent	515° F.
25 per cent	524° F.
30 per cent	532° F.
35 per cent	539° F.
40 per cent	546° F.
45 per cent	554° F.
50 per cent	564° F.
55 per cent	574° F.
60 per cent	584° F.
65 per cent	594° F.
70 per cent	606° F.
75 per cent	620° F.
80 per cent	639° F.
85 per cent	663° F.
90 per cent	699° F.
95 per cent	750° F.
Endpoint	Cracking

Engler Distillation of Raw Crude Gasoline Distillate

A.P.I. Gravity	48.6
I.B.P.	137° F.
5 per cent	178° F.
10 per cent	200° F.
20 per cent	236° F.
30 per cent	272° F.
40 per cent	302° F.
50 per cent	336° F.
60 per cent	364° F.
70 per cent	388° F.
80 per cent	407° F.
90 per cent	430° F.
95 per cent	444° F.
Endpoint	462° F.

Color, deep canary yellow; unsaturates,* 44 per cent; 98.5 per cent recovered.

*By this term, we mean the per cent absorption by an excess of cold conc (94 per cent) sulphuric acid. This method does not definitely measure the olefin content but is reasonably satisfactory for comparative purposes.

Engler Distillation of Finished Motor Fuel Refined in Plant

A.P.I. Gravity	50 6
I.B.P.	139° F.
5 per cent	177° F.
10 per cent	195° F.
20 per cent	226° F.
30 per cent	255° F.
40 per cent	281° F.
50 per cent	307° F.
60 per cent	331° F.
70 per cent	356° F.
80 per cent	377° F.
90 per cent	398° F.
95 per cent	413° F.
Endpoint	426° F.

Unsaturates, 45 per cent; color, 23 Saybolt; O.K., Doctor; O.K., Cu. strip 2 hours at 212 gums; 100 cc. Copper Dish, 80 mgs.: 20 cc. Glass Dish, 0.4 mgs.; 98 per cent recovered.

Fractional Gravity Distillation of Above Sample Hemple Distillation Apparatus

Cup— I.B.P.	Temp. °F. 88	A.P.I. Gr. Cut	% Absorp. by Conc. H_2SO_4
5 per cent	150	73.9	
10 per cent	174	67.0	58
15 per cent	192	63.0	
20 per cent	205	60.7	54
25 per cent	222	57.2	
30 per cent	235	55.1	48
35 per cent	250	53.2	
40 per cent	266	52.0	42
45 per cent	280	50.8	
50 per cent	295	49.7	41
55 per cent	311	48.6	
60 per cent	327	47.4	36
65 per cent	341	45.9	
70 per cent	353	44.9	34
75 per cent	366	44.0	
80 per cent	379	43.0	29
85 per cent	390	41.9	
90 per cent	402	44.1	24
Bottoms		39.5	19

Benzol equivalent, 54 per cent.

Engler Distillation of Laboratory Finished Motor Fuel From Raw Crude Gasoline Distillate

A.P.I. Gravity	51.9
I.B.P.	150° F.
5 per cent	189° F.
10 per cent	203° F.
20 per cent	224° F.
30 per cent	245° F.
40 per cent	267° F.
50 per cent	290° F.
60 per cent	310° F.
70 per cent	329° F.
80 per cent	350° F.
90 per cent	370° F.
95 per cent	384° F.
Endpoint	400° F.

Color, 30+; unsaturates, 43 per cent; gums 100 cc. Cu. Dish, 25 mgs.; gums 20 cc. Glass Dish, trace only; sweet to doctor; O.K., Cu. strip 2 hours at 212° F.

Gums on a raw untreated 425° F. endpoint sample obtained from the raw crude gasoline distillate were as follows:

100 cc. Cu. Dish	984 mgs.
20 cc. Glass Dish	55 mgs.
Per cent of unsaturates	48 mgs.

It can be readily seen that our method of refining has removed the major portion of the gums, the color, and only to a small degree changed the per cent of absorption by conc. H_2SO_4. Refined samples are exceptionally stable to sunlight, both as to color and gum. The writer wishes particularly to emphasize the fact that the refining has been done without the use of either sulphuric acid or clays, and that refining losses are exceptionally low.

PLANT RUN NO. 83—AUGUST 13, 1930
Charging Stock—High Sulphur Michigan Topped Crude

A.P.I. Gravity	23.6
I.B.P.	456° F.
5 per cent	526° F.
10 per cent	548° F.
15 per cent	578° F.
20 per cent	600° F.
25 per cent	622° F.
30 per cent	636° F.
35 per cent	646° F.
40 per cent	678° F.
45 per cent	694° F.
50 per cent	706° F.
55 per cent	714° F.
60 per cent	720° F.
65 per cent	726° F.
70 per cent	731° F.
75 per cent	738° F.
80 per cent	Temp. falling due to cracking.

Cracking in flask started at approximately 50 per cent over; per cent sulphur, 1.51.

Engler Distillation of 450° Endpoint Raw Crude Gasoline Distillate

A.P.I. Gravity	46.4
I.B.P.	126° F.
5 per cent	164° F.
10 per cent	188° F.
20 per cent	218° F.
30 per cent	246° F.
40 per cent	270° F.
50 per cent	298° F.
60 per cent	328° F.
70 per cent	360° F.
80 per cent	384° F.
90 per cent	412° F.
95 per cent	438° F.
Endpoint	448° F.

Color, deep yellow; sour to doctor; unsaturates, 44 per cent; sulphur, 0.14 per cent; 98.5 per cent recovered.

Engler Distillation of Finished Motor Fuel—Plant Refined

A.P. I. Gravity	49.2
I.B.P.	150° F.
5 per cent	184° F.
10 per cent	202° F.
20 per cent	222° F.
30 per cent	242° F.
40 per cent	264° F.
50 per cent	282° F.
60 per cent	300° F.
70 per cent	326° F.
80 per cent	348° F.
90 per cent	372° F.
95 per cent	394° F.
Endpoint	416° F.

Color, 23 Saybolt; O.K., Doctor; O. K., Cu. Strip 2 hours at 212; unsaturates, 44 per cent; sulphur, 0.073 per cent. Gums: 100 cc. Cu. Dish, 100 mgs.; 20 cc. Glass Dish, trace only; 98 per cent recovered.

Fractional Gravity Distillation of Above Sample

Per cent over I.B.P.	Temp. °F. 85	A.P.I. gravity of cut
5	160	70.0
10	180	61.4
15	195	58.0
20	207	55.6
25	219	53.6
30	230	52.1
35	244	50.8
40	256	50.0
45	268	49.2
50	283	48.4
55	298	47.4
60	311	46.5
65	325	45.7
70	339	44.9
75	352	44.1
80	364	43.1
85	377	42.3
90	390	41.4

Bottoms, 8.4 per cent; gravity of 39.3; benzol equivalent, 77 per cent.

Engler Distillation of Laboratory Untreated 424° F. Endpoint Sample

A.P.I. Gravity	47.5
I.B.P.	136° F.
5 per cent	174° F.
10 per cent	182° F.
20 per cent	217° F.
30 per cent	238° F.
40 per cent	259° F.
50 per cent	280° F.
60 per cent	302° F.
70 per cent	326° F.
80 per cent	353° F.
90 per cent	378° F.
95 per cent	398° F.
Endpoint	424° F.

Color, brownish yellow; sour to doctor; O. K., Cu. Strip*, 30 minutes at 212; unsaturates, 50 per cent; sulphur,* 0.11 per cent. Gums: 100 cc. Cu. Dish, 1,012 mgs.;

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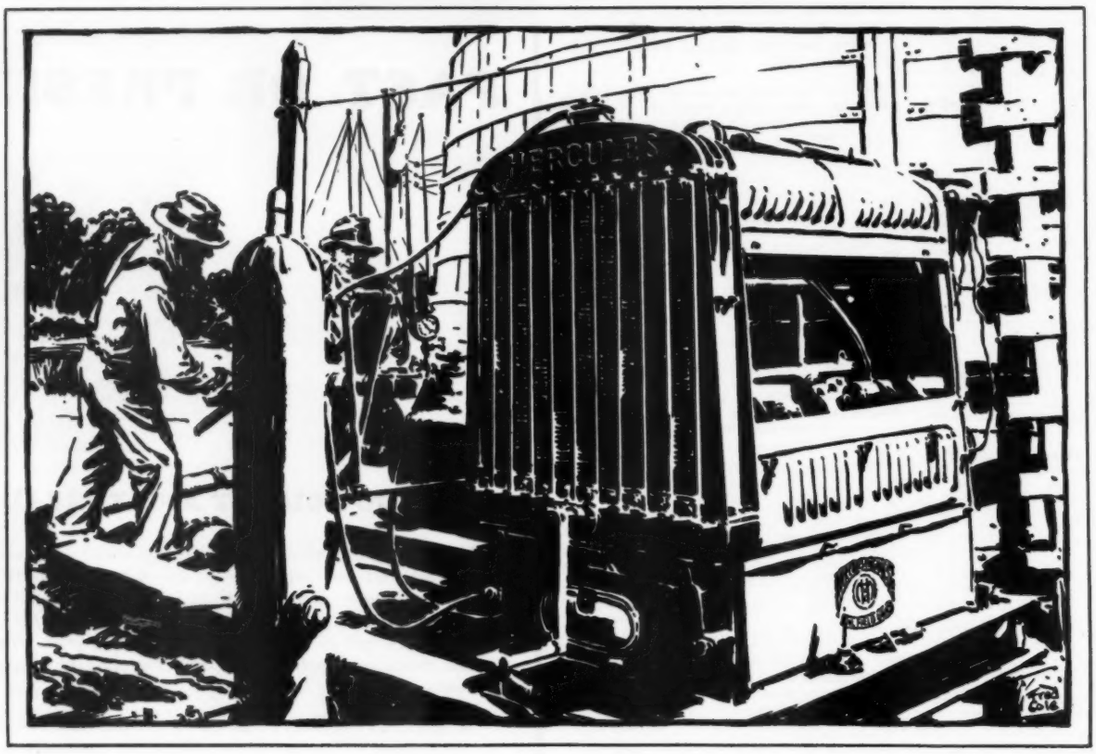

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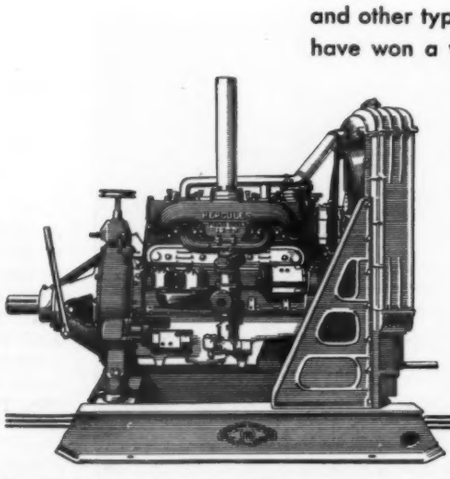

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HERCULES ENGINES

20 cc. Glass Dish, 121 mgs.; 98.5 per cent recovered; benzol equivalent, 84 per cent.

*The sample had been caustic washed before copper strip and sulphur tests were made.

Engler Distillation of Laboratory Refined Sample

A.P.I. Gravity	48.5
I.B.P.	136° F.
5 per cent	172° F.
10 per cent	191° F.
20 per cent	214° F.
30 per cent	241° F.
40 per cent	264° F.
50 per cent	287° F.
60 per cent	313° F.
70 per cent	336° F.
80 per cent	361° F.
90 per cent	385° F.
95 per cent	402° F.
Endpoint	413° F.

Color, 25; O.K., Doctor; O. K., Cu. Strip; unsaturates, 44 per cent; sulphur, 0.07 per cent. Gums: 100 cc. Cu. Dish, 35 mgs.; 20 cc. Glass Dish, trace only; 98.5 per cent recovered.

From a comparatively low Baume gravity and viscous charging stock containing 1.51 per cent of sulphur, there was produced a 424° F. endpoint gasoline fraction containing only 0.11 per cent of sulphur, and the sample, when refined, contained only 0.73 per cent sulphur. Other laboratory refined samples have shown as low as 0.05 per cent. There seems to be an elimination of sulphur as hydrogen sulphide due to decomposition of the sulphur containing compounds during their passage through the cracking zone. No difficulties were encountered in treating the raw gasoline and producing satisfactory motor fuel. Again the writer wishes to call attention to the fact that the gums have been materially reduced, while the unsaturates have been only slightly reduced by our method of refining.

An exceptionally good antiknock motor fuel has been produced from this topped crude. This fact is especially interesting in view of the fact that the straightrun gasoline from this same crude is void of any antiknock qualities and is highly detonating.

GUARANTEEING GAS BILLS AND INSTALLATION COST

(Continued from Page 76)

men tell us that this new policy of quoting installed prices on boilers has been of great assistance to them in closing a sales while the prospect is "hot."

Of course, I know there will be some of you who immediately will say that the idea of guaranteeing gas bills is impractical and foolish; that it involves too much risk; that it is difficult to check up on customers who may try to heat the "outdoors" by keeping doors and windows open, or who will raise the temperature many degrees above the maximum agreed upon in advance. We are not, however, advancing the idea of the guaranteed gas bill as the final solution of the problem, but merely recommend it to the consideration of the gas company officials in localities where they think it may fit. We lay more stress on proper selling methods and especially on the presentation of facts and figures which will prove to the customer's satisfaction that gas heating is not nearly so expensive as he had at first imagined.

Gas companies, or equipment manufacturers, who do not wish to guarantee gas bills, certainly would gain something if they would begin to make definite estimates in advance of the installation, and after the installation has been in operation for one season, checking up with customers to see if the actual cost has come within the original estimate. Testimonial letters could easily be obtained from such customers, mentioning the fact that the estimate cost was less than estimated, and saying something about how well they are pleased. We are all prone to underestimate the value which our prospective customers place upon testimonials from users. "Ask the man who owns one" is the most famous of contemporary slogans, and for very good reasons. The specific testimony of a customer on such an important point as gas consumption would be of tremendous value in selling central heating equipment.

First, ascertain what it has cost, or would cost, to heat a given house with coal. Deduct this from your estimated savings effected with gas, and reduce them as nearly as possible to actual figures. These savings include laundry bills, interior repainting and papering, housecleaning expense, excess wear and tear on draperies, curtains, rugs, cushions, upholstery, etc., due to the injurious effects of sulphur-laden coal dust, fumes and smoke. Each of these items may be small, but many customers will readily admit them to be conservative, and when they are all added up, the extra cost of gas heating becomes so very small wherever gas is obtainable at moderate prices as to become insignificant.

EASTERN FIELDS

(Continued from Page 90)

trict, the Owens Illinois Glass Co. are drilling their test on the Mary E. Hartley farm at 2,060 feet and in the same district have reached 860 feet in a test on the Joseph Orth farm.

SOUTHWEST PENNSYLVANIA

There were no additional completions in southwest Pennsylvania during the past week, and with lack of water in the gast areas, and with no incentive to drill in the oil regions, drilling is very dull. Among the wells drilling in Greene County the following represents the conditions. Freeman and Behm have reached 2,900 feet in a test on the Charley Tripp farm, Morris Township. The Manufacturers Light & Heat Co. have started their No. 3,443 on the Felix Bell farm, Wayne Township, and shut down at 250 feet, waiting on water. In Perry Township the Carnegie Natural Gas Co. has shut down for water at 2,580 feet in their second test on the Charles Bowers farm. In Center district, George Drake and others have a rig standing for a test on the Dean Piatt farm and unable to start drilling.

PENNSYLVANIA OUTPUT CUT 30 TO 50 PER CENT

PITTSBURGH, Pa., Nov. 22.—At a meeting of the Pennsylvania Oil Conservation Board of the Pennsylvania Grade Crude Oil Association, it was decided to revert to the previous rate of production curtailment. The operators in the Bradford, Pa., district will be held down to 50 per cent and in the Allegheny, N. Y., district 50 per cent, while in all other sections of Pennsylvania, West Virginia, and Ohio the rate of curtailment will be 30 per cent. The new schedule is effective November 21.

The indicated present daily production of the Pennsylvania grade crude is 63,000 bbls. a day and it is hoped that the increased curtailment will reduce this figure by at least 6,000 bbls. a day. A committee was ordered appointed to investigate the actual inventory conditions of both refined stocks held, and crude oil in storage.

Forest D. Dorn, chairman of the conservation board, called a meeting to be held December 19 at a time and place to be announced later. Those attending the Pittsburgh meeting were: Forest D. Dorn, chairman, Bradford, Pa.; R. J. Alexander, secretary, Oil City, Pa.; W. J. Brundred, Oil City, Pa.; Mr. Bradley, Oil City, Pa.; C. R. McNeal, Sheffield, Pa.; George J. Hanks, Bradford, Pa.; R. T. Zooks, Bradford, Pa.; R. J. Brennan, Bradford, Pa.; Thomas Thompson, Jr., Bradford, Pa.; E. C. Emery, Bradford, Pa.; J. B. Osborne, Titusville, Pa.; B. F. Clinger, Warren, Pa.; George L. Craft, Warren, Pa.; H. J. Crawford, Emlenton, Pa.; C. R. Dougherty, Butler, Pa.; W. H. Say, Butler, Pa.; H. R. Panton, Foxburg, Pa.; A. W. Goal, Clarendon, Pa.; A. S. Heck, Spencer, W. Va.; J. P. Flynn, Sistersville, W. Va.; Edwin Robinson, Charleston, W. Va.; Walter Reitz, Sistersville, W. Va.; F. E. Richart, Wellsville, N. Y.; John R. Cochrane, Wellsville, N. Y.; S. C. Pohe, Bolivar, N. Y.; T. O. Lane, New York City; R. T. Eastell, Pittsburgh, Pa.; J. H. Newlan, Pittsburgh, Pa.; H. D. Atha, Logan, Ohio; J. H. McCoy, Marietta, Ohio; A. E. Fain, New Straisville, Ohio, and J. C. Grimm, Woodsville, Ohio.

WILDCAT OPERATIONS IN MISSISSIPPI

(Continued from Page 51)

Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 ..... Drlg. 550 ft.

RANKIN COUNTY

R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e.. S.D. 900 ft.
Cleve Love's No. 1 Muse, SE cor. SW SW, Sec. 32-7-4e .. Derrick.
Love Pet. Co.'s No. 1 Moore (was Interior Oil Co.'s), 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e.. S.D. 900 ft.
Millstein O. & G. Co.'s No. 1 Gammill-Hartsfield, 400 ft. E, 400 ft. N, SW cor. SW SE, Sec. 6-5-2e ..... Location.
Sabine O. & G. Co.'s No. 1 Taylor, SE cor. SW NE, Sec. 6-5-2e ..... Drlg. rock 1,365 ft.
Jackson Royalties, Inc.'s No. 1 Pate, NE cor. NE SE, Sec. 12-5-1e ..... Began drlg. Oct. 5; cmtd. 12½-in. 280 ft; drlg. shale 2,120 ft.
Cleve Love et al's No. 1 Brown, C NW SE, Sec. 12-5-1e.. Began drlg. Oct. 9; drlg. 1,200 ft.
Pearl River O. & G. Co.'s No. 2 Pate, SE cor. SW SE, Sec. 12-5-1e ..... Began drlg. Oct. 7; cmtd. 10-in. 292 ft.

WARREN COUNTY

Raymond A. Moore et al's No. 1 Clark, SE, Sec. 31-16-5 (no check) ..... Derrick.
Vicksburg Oil Co.'s No. 1 Dornbush, 2,080 ft. S, 1,520 ft. W, NE cor., Sec. 8-18-5 ..... Drlg. 1,600 ft.

WINSTON COUNTY

Miss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-12-14. Drlg. 1,630 ft.

PROVEN AREAS

RANKIN COUNTY

Feazel O. & G. Co.'s No. 1 Cox, SE cor. SE SE, Sec. 12-5-1e ..... Derrick.
Gulf Ref. Co.'s No. 1 Hamilton, 1,320 ft. N, 1,320 ft. E, SW cor., Sec. 12-5-1e ..... Small show oil 2,620 ft. and 2-660 ft; cored chalk 2,867 ft.
Southern Pet. Co.'s No. 1 Ivey, SE, Sec. 12-5-1e..... Rig up.
Wallace Oil Co.'s No. 1 Cobb, SW cor. SE NE, Sec. 12-5-1e ..... Cmtd. 6⅝-in. 2,375 ft.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 46)

GOVE COUNTY

Johnson and Atlantic's No. 1 Wright, SE NE Sec. 11-12-27w ..... Drlg. 3,020 ft.
Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w ..... Drlg. 4,460-65 ft.; show water; fishing.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Clark, SW NE NE Sec. 11-9-25w. Drlg. 2,562 ft.
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w. Shut down 4,370 ft.

GRANT COUNTY

McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w.. Rigging up standard tools 2,435 ft.

GREENWOOD COUNTY

Staats et al's No. 1 Swan, NE NW Sec. 3-25-12..... Rig.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12.. Shut down 1,836 ft.

HARPER COUNTY

Atkinson et al's No. 1 Misak, SE cor. Sec. 25-34-6w..... Drlg. 4,675 ft.
Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w..... Shut down 1,830 ft.

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w..... 1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft., 6,000,000 ft. gas; at 2,132-42 ft., 3,000,000 ft gas; shut down.

KIOWA COUNTY

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w..... Drlg. 4,850 ft.
McKenna et al's No. 1 Ralston, C NE Sec. 14-28-20w.... Rig.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 ..... Shut down 910 ft.

MARION COUNTY

Aladdin Pet.'s No. 1 Koch, NW NE Sec. 36-17-3 ..... Rig.
Midwell's No. 1 La Master, NW cor. Sec. 31-22-4..... Spudding.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5..... Rig.

MARSHALL COUNTY

Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 ..... Drlg. 1,295 ft.
Brasier et al's No. 1 Runkel, SE NW Sec. 13-2-6..... Shut down 50 ft.

McPHERSON COUNTY

United Pet. Co.'s No. 1 Kalgi, NE cor. Sec. 20-19-1w..... Rig.
Henderson & Holden's No. 1 Sommerfield, NE SW Sec. 23-19-1w ..... Drlg. 1,500 ft.
Aladdin Pet.'s No. 1 Rudolph, NW NE Sec. 26-18-3w.... Shut down 250 ft.
Slick et al's No. 1 Randell, C SW SW Sec. 35-17-5w..... Drlg. 520 ft.
Aladdin Pet. Co.'s No. 1 Larson, C NW Sec. 22-18-4w... Rig.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-34-42w ..... Underreaming 5-in. csg. 3,460 ft.

MORRIS COUNTY

Urschell et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7.. Machine.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9... Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6..... Shut down 2,420 ft.

NESS COUNTY

Gypsy Oil Co.'s No. 1 Coleman, C SW NE Sec. 25-17-25w.. Rig on ground.

OSAGE COUNTY

Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15..... Shut down 410 ft.

PAWNEE COUNTY

Phillips' No. 1 Cuthbertson, NE cor. Sec. 27-20-8w..... Drlg. 3,435 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w ..... Fishing 4,353-95 ft.; water.

RAWLINS COUNTY

Danciger Oil & Ref.'s No. 1 Unknown, SW cor. Sec. 3-2-35w ..... Fishing 1,975 ft.

RENO COUNTY

Braden et al's No. 1 Thersen, SE NE Sec. 6-22-4w..... Shut down 3,475 ft.
Alco Royalty's No. 1 Kinney, SE cor. Sec. 16-27-7w..... Shut down 3,925-32 ft.: water.
Shell Pet Corp.'s No. 1 Popp, NW cor. Sec. 11-25-5w... Shut down 3,656 ft.

RICE COUNTY

Streeter & Stearns' No. 1 Blake, NE NW Sec. 9-18-10w.. Rig on ground.
Muth Bros. No. 1 Beyers, NE NW Sec. 21-19-9w..... Drlg. 1,670 ft.
Jasper & Beschka's No. 1 Cupp, SW NE Sec. 22-18-9w .. Drlg. 2,010-20 ft.; 7,500,000 ft. gas; drlg. 3,168 ft.; shut down 3,315 ft.; water.
United Pet. Co.'s No. 1 Willman, NE cor. Sec. 29-21-9w.. Drlg. 3,185 ft.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w.... Silicious lime 3,252-53 ft.; flowing 20 bbls. an hr.; estimated 2,000 bbls.; comp.

ROOKS COUNTY

Streeter-Stearns' No. 1 Conger, SE NW NE Sec. 16-10-16w ..... Drlg. 3,300 ft.

RUSH COUNTY

Prairie et al's No. 1 Lecker, NW SW SW Sec. 5-16-18w.. Drlg. 3,550 ft.; show oil at 3,337-50 ft. which exhausted; shut 50 ft. which exhausted; abnd. 3,759 ft.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w... Fishing 810 ft.

RUSSEL COUNTY

Empire Oil & Ref. Co.'s No. 1 Sherwood, SE NW NW Sec. 21-14-13w ..... Drgl. 3,223 ft.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-13w ..... Shut down 2,740 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w... Shut down 3,155 ft.

SEDGWICK COUNTY

Streeter & Stearn's No. 1 Tobin, SW SE NE Sec. 5-22-3...Shut down 1,330 ft.
Branson et al's No. 1 Kincaid, SE NW NW Sec. 4-28-1..Shut down 50 ft.
Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1..Rig.

SALINE COUNTY

Sampson et al's No. 1 Sudenderf, NE SE Sec. 30-14-2w..Rig on ground.
Twin Mounds Oil Co.'s No. 1 Wels, C W half NE NW Sec. 20-13-4w .....Shut down 2,500 ft.

STEVENS COUNTY

Argus Gas' No. 2 Ponder, C NW Sec. 10-32-38w.....Drlg. 2,470 ft.
Western Prod. Co.'s No. 1 Ponder, C NE Sec. 10-32-38w..Sand 2,532-2,643 ft.; 7,000,000 ft. gas.
Western Prod. Co.'s No. 4 Fee, C NE Sec. 6-32-36w.....T. D. 2,812 ft.; 4,000,000 ft. gas; rig burned.
Braden et al's No. 1 Theisen, SE NE Sec. 6-22-4w.....Rig on ground.
McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 33-32-39w .....Drlg. 400 ft.

SEWARD COUNTY

Liberal Gas' No. 1 C N half NE Sec. 4-35-34w.....Drlg. 2,625 ft.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-33-3..Shut down 3,649 ft.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w....Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3....Drlg. 1,650 ft.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 50)

E. S. Price's No. 1 Weiss, 200 ft. each way out of NW cor. of B.&B. Sur. .....T. D. 4,423 ft.; preparing to swab
E. S. Price's No. 2 Weiss, 900 ft. due SW of No. 1 Weiss, B.&B. Sur. .....T. D. 4,462 ft.; circulating mud.
E. S. Price's No. 3 Weiss, 900 ft. due NE of No. 1 Weiss..Location.
Moody-Seagraves Producing Co.'s & Independent Oil & Gas Co.'s No. 1 Welder, 6,280 ft. from S line, 8,150 ft. from E line of Welder tract, Henry Eyles Sur. .....T. D. 1,650 ft.; drlg.
Cosden Oil Co.'s No. 1 Stoltzfus, 2,310 ft. S and E lines of Sec. 14, Rangley Subd. of C. Miller ranch, Uranga Sur. .....T. D. 4,500 ft.; shut down.
Humble and Hurlbut et al's No. 1 J. C. Wood, 150 ft. from NW line, 1,144 ft. from SW line of P. T. Irrigation Co. .....T. D. 5,077 ft.; standing.
The Texas Company's No. 1 McCampbell, 150 ft. from N and E lines of 161-ac. tract, R. Pena Sur. .....Location.
Simms Oil Co.'s No. 2 Holsmark, 660 ft. N and 20° E of No. 1, T. York Sur. .....T. D. 1,020 ft.; drlg.
Rowan and Hope's No. 1 Goree, 600 ft. S, 300 ft. W. Lot 4. T. B. Barton Sur. .....Derrick.

BEXAR COUNTY

Eckert & Son's No. 3 J. J. Brehm, 545 ft. from N line, 150 ft. from W line of lease, Sur. No. 58 .....Location.
Gatlin Oil Co.'s No. 2 I. A. Beck, 150 ft. from SE line, 2,551 ft. from SW line of lease, J. Montez Sur. .....Location.
Humble Oil & Ref. Co.'s No. 1 Ernest Lamm, near Elmendorf, southern part of county .....Moving in machinery
Long and Craig's No. 1 Sandemer .....Location.
K. M. S Pet. Co.'s No. 1 E. Salicky, 132 ft. from E line, 10 ft. S line of tract, Blk. 15, Mission Gardens .....T. D. 1,101 ft.; dry and abnd.
J. M. Russell's No. 1 F. L. Price, 1,500 ft. to N line, 660 ft. W of tract in Angel Navarro Sur. .....T. D. 206 ft.; changing rig.
Snyder, Reeves et al's No. 2 Glasscock, 12 miles NE of San Antonio .....T. D. 702 ft.; shut down.
Weibacher et al's No. 1 Ernst, 6,400 ft. S line, 900 ft. W line of J. Christopher Sur. .....T. D. 720 ft.; shut down.
Penn Oil Co.'s No. 1 Kosub, 600 ft. N of NE cor. of Cooksey tract, then 700 ft. E on 175-ac. tract, J. Riall Sur. .....T. D. 1,535 ft.; setting csg.
Somerset Syndicate's No. 1 Lagrange, 54 varas from S and W lines of Carrico tract, Sur. No. 48 .....T. D. 375 ft.; shut down.
J. E. Weatherall and Ben C. Hilman's No. 1 Talley .....Location.
Russell and Moore's No. 2 Mills, 20 ft. S of No. 1, Angel Navarro Sur. .....T. D. 1,088 ft.; drlg.
S. M. Terrell et al's No. 1 A. Beadom, 1,100 ft. from E line, 12,000 ft. from N line of John Barber Sur. ..Location.
F. W. Tong's No. 1 Willie Sandemer, 150 ft. from NE and SE lines of the N 20 acres of Willie Sandemer 400-ac. tract, Juan Montez Sur. .....T. D. 250 ft.; drlg.
Bowman and Waldrop's No. 1 Ridder, 1,000 ft. from S and W lines of 688-ac. tract, J. M. Sur. .....T. D. 1,096 ft.; shut down.

CALDWELL COUNTY

L. H. Wentz' No. 1 W. D. Myrick, 150 ft. W of CEL of 118-ac. tract, B. Lockhart Sur. .....Location.
Callihan et al's No. 3 W. H. Callihan, 70 ft. N, 65 deg. E of No. 2 .....T. D. 2,525 ft.; shut down.
Callihan et al's No. 4 W. H. Callihan, 2,000 ft. from N line, 1,945 ft. from W line of tract, John R. Miller Sur. .....T. D. 2,520 ft.; standing.
W. D. Anderson's No. 1 Vickery, 150 ft. from N line, 450 ft. from W line of farm, Damon Sur. .....T. D. 1,873 ft.; drlg; show oil in Serpentine at 1,833 ft.
Cargil et al's No. 1 Thomas, 1,505 ft. from E line, 150 ft. from NE cor. of A. W. Jordan tract, J. Roberts Sur. .....Rigging up.
Blount and Mills' No. 1 McMahan, 275 ft. from SW line, 75 ft. from SE line of 50-ac. tract, J. Pinchback Sur. .....T. D. 1,730 ft.; drlg.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas in the J. D. Tilly Sur. .....T. D. 5,964 ft.; junked and abnd.

COLORADO COUNTY

Lewis Siagel Drilling Co.'s No. 1 Henderson, 990 ft. from W line, 2,310 ft. from S line, Sec. 1, Blk. 57, T.&P. Sur. .....Location.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. .....T. D. 600 ft.; standing.

DEWITT COUNTY

Penn Oil Co.'s No. 1 Junker, center N half 20-ac. tract, Pettus Sur. .....T. D. 4,563 ft.; drlg.
H. T. Roe's No. 1 Leinhardt .....T. D. 2,170 ft.; shut down.
A. H. Gibson et al's No. 1 Von Roeder, 750 ft. N line, 200 ft. E line of farm, W. G. Hill League .....T. D. 3,287 ft.; show oil in sand, shale and shells.
Sheldon Petroleum Co.'s No. 1 Goehring, center of Goehring tract, H. Stubblefield Sur. .....Location.

DUVAL COUNTY

S. R. C. Oil Co.'s No. 1 Duval County Land Co., Sur. 280 .....Rigging up.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 .....T. D. 6,575 ft.; drlg.
James Dalgish's No. 2 Peterson, 850 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur.. Location.
James Dalgish-Morrow's No. 1 Peterson, NW cor. Sec. 82, Blk. E, H.E.&W.T.R.R., NE cor. of county in the H.E.&W.T.R.R. Sur. .....T. D. 4,925 ft.; drlg.

FALLS COUNTY

Marlin Oil Co.'s No. 1 Hodges .....T. D. 2,340 ft.; shut down.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft N, 330 ft. E of C Sec. 123, Antone Hupzer .....T. D. 2,994 ft.; drlg.

GOLIAD COUNTY

A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. .....T. D. 2,330 ft.; shut down.
Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. .....T. D. 4,890 ft.; drlg.
T. B. Slick's No. 1 Poetler, 1,500 ft. from SW line, 900 ft. from SE line of 591-ac. tract, Obid Marshall Sur. .....T. D. 2,790 ft.; drlg.

GONZALES COUNTY

Linden Petroleum Corp.'s No. 1 Hensley, 650 ft. from N line, 1,110 ft. from W line Hensley tract, J. Smith Sur.; reinstated .....T. D. 4,785 ft.; shut down.
Andibus & Cummings' No. 1 R. D. & J. C. Miller, 523 ft. from S line, 1,000 ft. from E line, Ann Williams Sur. .....T. D. 2,550 ft.; shut down.
Acme Oil & Royalty Corp.'s No. 1 H. K. Weber, 2,525 ft. from NW line, 2,250 ft. from SW line, Wright Sur. .....T. D. 2,560 ft.; shut down.
Weal Oil Co.'s No. 1 Martin, 360 ft. SE line and SW line of tract, Thomas Moore Sur. .....Derrick.
United North & South Development Co.'s No. 1 Wells, 450 ft each way out of NW cor. of Wells tract, Johnson league .....T. D. 4,258 ft.; drlg.

GUADALUPE COUNTY

J. S. Suttle's No. 2 A. Baenzinger, 40 ft. E line, 150 ft. S line of tract in the A. O. Mansola Sur., 6½ miles S from Seguin .....T. D. 1,957 ft.; standing.
Ray Oil Co.'s No. 1 R. Felsing, 300 ft. NW line, 450 ft. NE line 120-ac. tract in the M. Baker Sur. .....T. D. 900 ft.; shut down.
J. S. Suttle's No. 1 Wurzbach, 3,750 ft. from NW line, 2,450 ft. from NE line of Young Setton Sur. .....T. D. 1,360 ft.; drlg.
O. K. Emerson's No. 1 C. A. Phillips, center of 80-ac. tract, Velda Sur. .....Rigging up.
Jones and Erwin's No. 1 O. Forrester, 2,700 ft. from NE cor., 450 ft. from NW line, O. Forrester tract, Pate Sur. .....T. D. 707 ft.; shut down.
Jones and Erwin's No. 1 Hoese, 150 ft. each way out of NE cor. of 200-ac. tract, J. Leal Sur. .....T. D. 385 ft.; drlg.
Adams and Lyles' No. 1 Seligman, 150 ft. from E line, 300 ft. from S line of 462-ac. tract, John King Sur. .....T. D. 2,513 ft.; dry and abnd.

HAYS COUNTY

Hailey & Whittington's No. 1 Heidenrich, 4,900 ft. from NW line, 400 ft. from NE line of farm, Hemphill Sur. .....T. D. 1,300 ft.; drlg.
San Marcos Oil & Gas Co.'s No. 1 A. H. Alford .....T. D. 513 ft.; waiting on cement.

JIM HOGG COUNTY

Cole Petroleum Co.'s No. 1 Allen, 150 ft. from W line, 336 ft. from N line, Blk. 7, Sur. No. 23 .....T. D. 1,575 ft.; drlg.
E. E. Watts' No. 1 Gomez, 4,200 ft. to N line, 1,400 ft. to E line of Sur. 125 .....T. D. 1,105 ft.; waiting on cement.
J. D. Pulliam's No. 1 Jones, 1,020 ft. W line, 1,020 ft. S line, Share 5-A Hinojosa Sur. .....T. D. 1,620 ft.; drlg.
P. H. Wilson's No. 1 Edds, Sur. No. 210 .....Rigging up.

JIM WELLS COUNTY

J. Walsh et al's No. 1 W. D. Wade, 1,035 ft. NE line, 300 ft. NW line of N cor., Lot 1, Blk. C, W. H. Bode Sur. .....T. D. 2,920 ft.; set 6⅝-in. csg 2,908 ft.; show gas 2,610-20 ft.
Prairie Lea Prod. Co.'s No. 1 Oppenheimer .....Spudded and shut down.

KARNES COUNTY

J. F. Morrissey et al's No. 1 Rigsdale, 660 ft SW of C of NE line of 170-ac. farm in the McCoull Sur. .....T. D. 2,000 ft.; standing
J. F. Morrison's No. 1 Cockran, 150 ft. from S line, 500 ft. from E line of tract, D. B. McConnell Sur. .....Location.
Hurlbut et al's No. 1 Newberry, 450 ft. SE and SW line of Newberry 428-ac. tract, Carlos Martinez Sur. ... T. D. 2,975 ft.; coring.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. .....T. D. 1,110 ft.; standing.
Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE fom Kendalia .....T. D. 900 ft.; standing.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale .....T. D. 2,860 ft.; shut down.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia .....T. D. 1,600 ft.; shut down.
R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,488 ft. S line .....T. D. 705 ft.; standing.
Permian Oil Co.'s No. 1 Boles, S.A.&M.G. Ry. Sur. No. 542½ .....T. D. 1,710 ft.; drlg.
Hardy Sitton's No. 1 McMillan, south central part of 180-ac. lease, B. Williams Sur. .....Location.
Abercrombie Oil Co. and Harrison Oil Co.'s No. 1 Kunz, 900 ft. from E line, 1,900 ft. from S line of McCormack Sur. .....T. D. 1,900 ft.; drlg.

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. .....T. D. 3,100 ft.; drlg.

KINNEY COUNTY

Magnolia Pet. Co.'s No. 1 Whitehead-Wardlaw, 2,640 ft. W line and S line of Melton Valdez grant .....T. D. 3,930 ft.; drlg. in black lime.
Mardon Oil Co.'s No. 2 Jim Clamp .....T. D. 1,389 ft.; standing.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. .....T. D. 850 ft.; standing.
Kamon et al's No. 1 Hodges .....T. D. 260 ft.; running 12-in. csg.

LASALLE COUNTY

Fred W. Valz' No. 1 Coleman, 200 ft. from S and E lines of SW Sec. 514, B.S.&F. Sur. .....T. D. 40 ft.; standing.

LAVACA COUNTY

Newton Oil Co.'s No. 1 Reeves, cor. of S line of Reeves tract, John Hueser Sur. .....T. D. 2,160 ft.; shut down.

LIVE OAK COUNTY

Jacob, Buzzini & Pickett, Inc.'s No. 1 C. E. Kay, in the Bridget Fadden Sur., 3 miles E from George West....T. D. 915 ft.; shut down.
Penn Oil Co.'s No. 2 Lyne Bros., 1½ miles SW of No. 1. Rigging up.
Houston Oil Co.'s No. 3 Dunning, 330 ft. from NE line and 2,800 ft. from SE line of tract, M. B. Kilvin Sur..Moving in derrick.
Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. .....T. D. 3,620 ft.; reaming.
O. Stalley et al's No. 1 Nichols, 2,000 ft. from W line, 500 ft. from S line in the Ayers Sur. .....Location; abandoned.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. .....T. D. 401 ft.; drlg.
Sid Keoughan's No. 1 C. E. Terrell, 6,000 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. .....T. D. 2,840 ft.; shut down.
Tul-Tex Oil Co.'s No. 1 L. Jacobs, 4 miles from N of Callihan Field .....T. D. 1,440 ft.; standing.

LEE COUNTY

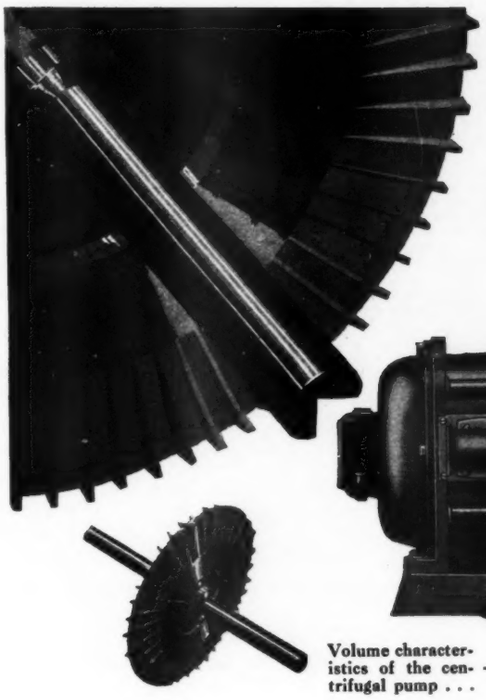
Burt et al's (M. D. Rickett) No. 1 R. C. Sanders .....T. D. 3,124 ft.; shut down.
Marts and others' No. 1 Thomas .....T. D. 1,100 ft.; drlg.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. .....T. D. 1,987 ft.; will drill deeper.

McLENNAN COUNTY

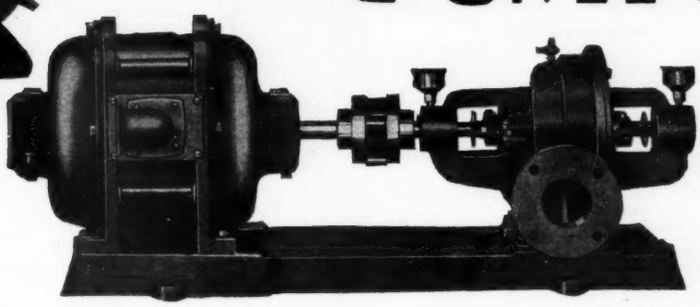
C. E. Groone and others' No. 1 League .....T. D. 932 ft.; shut down.
W. L. Murrel and others' No. 1 Hixon .....T. D. 775 ft.; shut down.

McMULLEN COUNTY

Mogul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. .....T. D. 632 ft.; standing.



WESTCO TURBINE PUMPS



Volume characteristics of the centrifugal pump . . . + Pressure characteristics of the piston pump . . . . . — The disadvantages of both types . . . . . = WESTCO TURBINE PUMPS

Westcos with their ultra-simplicity are used for still charging service and for pumping all grades of gasoline, hot oil, naphtha, Fuller's Earth and oil mixtures, brine and water. Engineering data sent upon request.

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Made Possible By The Unique Westco Turbine Principle

Sheree, Brodie and Emick's No. 1 Shiner, Henry Brewer Sur. ..... T. D. 112 ft.; set 10-in. csg.; show gas 85 ft.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 7, I.&G.N. Sur. ..... T. D. 3,919 ft.; drlg.
Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ..... T. D. 7,092 ft.; trying to sidetrack junk.

MEDINA COUNTY

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ..... T. D. 1,657 ft.; standing; depth corrected.
Caldwell et al's No. 1 L. W. Burrell ..... T. D. 518 ft.; depth corrected.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine ..... T. D. 2,775 ft.; shut down.
United North & South Dev. Co.'s No. 1 Little, S from D'Hanis and near S line of county ..... T. D. 4,236 ft.; drill stem stuck.

MILAM COUNTY

W. H. Birdwell and others No. 1 C. H. Coffield, 150 ft. from N line, 150 ft. from W line of 190-ac. farm, I. J. Chambers Sur. ..... T. D. 1,415 ft.; waiting on cement.
Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ..... T. D. 1,475 ft.; shut down.
Kyser, Roberts & Dibble's No. 2 Ward ..... T. D. 1,600 ft.; shut down.
Lloyd Oil Corp. and H. W. Elliott's No. 1 Davis ..... T. D. 1,300 ft.; standing.
G. I. Moore's No. 1 Davis ..... T. D. 1,200 ft.; drlg.
Peggie Bros.' No. 1 M. Reed ..... T. D. 650 ft.; shut down.
Service Oil & Gas Co.'s No. 1 H. G. Hensley, 500 ft. from NW line, 400 ft. from NE line of 50-ac. tract, Valdez Sur. ..... T. D. 2,180 ft.; drlg.
Service Oil & Gas Co.'s No. 1 R. White, 650 ft. from NE line, 900 ft. from NW line of White tract, Levi Taylor Sur. ..... T. D. 1,375 ft.; comp. 1,000,000 ft. gas.

NUECES COUNTY

Grimm and others' No. 1 Wm. Baur ..... Location.
Hale & Hall's No. 1 Koenisch ..... Rigging up rotary.
Houston Oil Co.'s No. 1 Comstock, 105 ft. N of C of tract ..... T. D. 4,719 ft.; sand; shut down.
Houston Oil Co.'s No. 1 Joe Hunter, 607 ft. from W line, 165 ft. from S line, 75-ac. tract, Sec. 591 ..... Location.
Bowen et al's No. 1 Theo Prieur ..... Spudded and shut down.
Pearson Properties, Inc.'s No. 1 State National Bank ..... T. D. 4,811 ft.; coring.
Calallen Oil & Gas Co.'s No. 2 Allen, 800 ft. from E line, 1,100 ft. from S line, Blk. 76, Garias Sur. ..... T. D. 1,887 ft.; shut down.
H. H. Weinert's No. 1 Mohle, 450 ft. from S line, 450 ft. from W line, Sec. 94, Bishop Subd., Palo Alto lands ..... T. D. 452 ft.; set casing.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW Sec. 175 ..... T. D. 640 ft.; shut down.

STARR COUNTY

Los Olmos Oil Co.'s No. 2 Kelsey-Bass, Blk. 6, Porcion 77 ..... Derrick.

SAN PATRICIO COUNTY

J. L. Kennedy's No. 1 McRae, 1,170 ft. NW of the C of the SE line of 500-ac. tract ..... T. D. 2,152 ft.; temporarily abnd.
George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neil Sur., Abstract 211 ..... T. D. 4,020 ft.; shut down.
Cosden Oil Co.'s No. 1 Ramsey, 3,000 ft. from N line, 4,500 ft. from E line, Portilio Sur. ..... T. D. 2,601 ft.; shut down.
Union Prod. Co.'s No. 4 Welder, 3,000 ft. N line, 4,500 ft. E line of tract in the E. Portillo Sur. ..... T. D. 5,893 ft.; standing.
G. B. Peterman et al's No. 1 Foster, 150 ft. from E line, 1,420 ft. from N line of Blk. 5 of the Welder-Coleman-Fulton Subd., 3½ miles W from Sinton ..... Location.
LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line ..... T. D. 4,067 ft.; temporarily abnd.
Cosden Oil Co.'s No. 1 Powell, 330 ft. E line of 35-ac. tract in Sec. 32, Paul Subd., Coleman-Fulton Pasture Lands ..... T. D. 4,532 ft.; standing.

TRAVIS COUNTY

Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur ..... T. D. 385 ft.; shut down; depth corrected.
Sun Oil Co.'s No. 1 Nagle ..... T. D. 812 ft.; show oil and water at 655 ft.
Allen et al's No. 1 Sophie Smith ..... Building derrick.

UVALDE COUNTY

Phantom Oil Co.'s No. 1 Claudt, Sec. 611 ..... T. D. 2,710 ft.; shut down.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur. 8 miles S of Uvalde ..... T. D. 1,610 ft.; shut down.

VICTORIA COUNTY

Newton and others' No. 1 West ..... T. D. 1,550 ft.; standing.
The Texas Co.'s No. 1 A. M. McFadden, 1,550 ft. N and E lines of H. Bonny Sur. ..... T. D. 6,201 ft.; drlg. sand.

WEBB COUNTY

Usher Carson et al's No. 3 Benavides, 150 ft. from S and W lines of Blk. 7, Sur. 1,613 ..... Location.
O. W. Killam's No. 1 Brunl, 2,490 ft. from E line, 1,170 ft. from S line of Sur. No. 77 ..... Derrick.

WILSON COUNTY

Rycade Oil Corp. and Getty Petroleum Co.'s No. 1 J. A. Johnson, 150 ft. from N line, 600 ft. E of railroad tract, Jose de Balmaseda Sur. ..... Rigging up.
Stover and Wren's No. 1 John Reuss, 10,400 ft. from SW line, 2,300 ft. from NW line, O. A. Trevino Sur. No. 19 ..... T. D. 45 ft.; standing.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigging up.
John Poppas Pool, Inc.'s No. 1 Flores, 2,977 ft. SE line, 6,000 ft. Rio Grande River, Porcion 35 ..... Rigged up.
B. F. Nixon's No. 1 A. Guiterrez, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant ..... T. D. 50 ft.; standing.
O. W. Killam's No. 2 Slator, Borrego grant ..... Derrick.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 1,760 ft.; drlg.
William Marks' No. 1 Flores, Blk. 36, Porcion 37 ..... Location.
National Oil Co. of Delaware's No. 1 Luther 617 ft. NW line, 94 ft. NE line, Blk. 97, Da Prom Subd., Porcion 6 ..... T. D. 380 ft.; standing.
Mackenzie and Tallmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3 ..... T. D. 221 ft.; drlg.
F. M. Blair & Son's No. 1 Guiterres, 150 ft from NW line, 660 ft. from SW line, Blk. 2, Blair Subd., Comitas grant ..... T. D. 1,750 ft.; standing.
Lincoln Oil & Gas Co.'s No. 1 Guitorrez, Blk. 23, Subd., La Huerta grant ..... T. D. 1,150 ft.; standing.
J. J. O'Hern's No. 1 S. Benavides, 150 ft. from NW line, 150 ft. from NE line, Blk. 10, Fansler Subd., Villa grant ..... T. D. 1,404 ft.; standing.

ZAVALA COUNTY

Ed Anglin's No. 6 La Pryor ..... Location.
Carl Cromwell's No. 1 Whitecotton, C of NW Sec. 1, A.P.&M. Sur. ..... Location.
Ed Anglin's No. 1 Matthews, 118 varas from S and W lines of Sec. 4, Blk. 2, I.&G.N. Sur. ..... T. D. 1,155 ft.; shut down.
Texas Gas Utilities Co.'s No. 2 Pryor, 900 varas W, 1,108 varas S of Anglin's No. 3 Pryor ..... T. D. 1,960 ft.; shut down.
F. W. Weigand's No. 1 Gates, 1,320 ft. from N line, 330 ft. from NE cor., Sur. No. 13 ..... T. D. 3,215 ft.; shut down.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 58)

Danciger O. & R. Co.'s No. 1 Sullivan, 231 ft. N, 224 ft. W, of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ..... S.D. 2,240 ft.
Danciger O. & R. Co.'s No. 2 Sullivan, 231 ft. N, 884 ft. W, of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ..... Drlg. 2,310 ft.
Dulaney & Word's No. 1 Morse, 330 ft. S and W, Sec. 18, Blk. A-9, H.&G.N. Sur. ..... Drlg. 2,360 ft.
Empire G. & F. Co.'s No. 1 Bell, 1,320 ft. S, 1,660 ft. E, SW, Sec. 111, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,290 ft.
Empire G. & F. Co.'s No. 1 Cantrell, 330 ft. S and E, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,915 ft; estimated 10,000,000 ft. gas 2,630-40 ft.
Empire G. & F. Co.'s No. 1 Froshier, 1,320 ft. S and E, Sec. 177, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,420 ft; S.G. 2,280 ft.
Empire G. & F. Co.'s No. 1 Sullivan, 330 ft. NW of E 64 ac. of W 104 ac. of S 264 ac., N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... 1,000,000 ft. gas 2,775 ft; fishing 3,068 ft.
Hurst et al's No. 1 Ayres, 330 ft. S and E, Sec. 76, Blk. 3, I.&G.N. Sur. ..... Rotary rig.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,765 ft.
Magnolia Pet. Co.'s No. 1 Latham, 876 ft. N, 150 ft. E, Sec. 153, Blk. 3, I.&G.N. Sur. ..... 9,000,000 ft. gas 2,705 ft; drlg. 2,940 ft.
Magnolia Pet. Co.'s No. 2 Heitholt, 150 ft. S, 1,156 ft. W, SE, Sec. 152, Blk. 3, I.&G.N. Sur. ..... Rigging up rotary.
Magnolia Pet. Co.'s No. 2 Latham, 175 ft. N, 150 ft. E, Sec. 153, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,479 ft.
Magnolia Pet. Co.'s No. 1 Morse, 330 ft. N and W, S½ NE, Sec. 5, Blk. 26, H.&G.N. Sur. ..... Bldg. rig.
Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Bldg. rig.
Midwest Exptin. Co.'s No. 1-B Taylor, 660 ft. N and W, Sec. 7, Blk. H, A. W. Willard Sur. ..... Drlg. 2,575 ft.
Midgray Oil Co.'s No. 1 McCullough, 267 ft. N, 150 ft. E of 246.9 ac. in Sec. 153, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,195 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... Fishing for bit; T.D. 2,620 ft.
North American O. & G. Co.'s No. 1 Duncan, 810 ft. N, 660 ft. E, E½ SW, Sec. 135, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,422 ft.
North American O. & G. Co.'s No. 1 Sullivan, 1,320 ft. S and E, Sec. 160, Blk. 3, I.&G.N. Sur. ..... Cellar.
Phillips Pet. Co.'s No. 1 Barrett, 330 ft. S, 150 ft. W, W½, N 56 ac., Sec. 1,360, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,515 ft.
Phillips Pet. Co.'s No. 2 Barrett, 130 ft. N, 465 ft. W, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Standardizing 2,416 ft.
Prairie O. & G. Co.'s No. 1 Reynolds, 330 ft. S and E, NW, Sec. 84, Blk. 3, I.&G.N. Sur. ..... Estimated 1,900,000 ft. gas 2,590-2,920 ft; drlg. 3,080 ft.
W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 184, Blk. 3, I.&G.N. Sur. ..... Estimated 4,000,000 ft. gas 2,875 ft; S.D. 3,015 ft.
Shamrock O. & G. Co.'s No. 1 Reynolds, 330 ft. N and E, SE SE, Sec. 84, Blk. 3, I.&G.N. Sur. ..... S.O. 2,905 ft. and 2,994 ft; S.D. 3,193 ft; P.B. 3,102 ft; to shoot.
Skelly Oil Co.'s No. 1 Heitholt, 150 ft. N, 3,806 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur. ..... 9,000,000 ft. gas 2,606-2,865 ft; fishing 2,915 ft.
Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ..... 3,000,000 ft. gas 2,150-70 ft; S.D. 2,892 ft; 400 ft. oil in hole.
Southern States Gas Co.'s No. 1 Case, 330 ft. N and W, E½, Sec. 181, Blk. B-2, H.&G.N. Sur. ..... Spudded.
Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ..... Rig.
The Texas Co.'s No. 3 Brown, 150 ft. S, 330 ft. W of 247-ac. lease, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,220 ft; S.G. 2,935 ft.
Warner Oil Co.'s No. 1 Morse, 330 ft. S and W, N½ NW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... Cellar.

HUTCHINSON COUNTY

Combination O. & G. Co.'s No. 1 Johnson Bros. (Whaley), C SE SW, Sec. 2, Blk. Y-2, T.T.R.R. Sur. ..... Bldg. rotary rig.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E, of N 80 ac. S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. ..... Bldg. rotary rig.
Dixon Creek Oil Co.'s No. 1 Johnson Bros., 330 ft. N and W of E 60 ac. of NW 100 ac., Sec. 1, Blk. X03, H.&O.B. Sur. ..... Drlg. 2,960 ft.
Huber Prod. Co.'s No. 1 Johnson Bros., 330 ft. N and E, E½ NW, Sec. 30, Blk. Y, A.&B. Sur. ..... S.D. 2,800 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Pure), 330 ft. S and E of E 240 ac., Sec. 29, Blk. Y, A.&B. Sur. ..... T.D. 3,052 ft; P.B. 2,890 ft; C.O.
Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... Rotary rig.
Liner Drlg. Co.'s No. 1-D Johnson Bros., 330 ft. N and E, W½ SW, Sec. 6, Blk. 1, B.&B. Sur. ..... Rigged up and S.D.
Texas Interstate P. L. Co.'s No. 1 Bivins, C E½ of N 160 ac., Sec. 91, Blk. 6, H.&T.C. Sur. ..... Drlg. 490 ft.
Lanier et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. ..... Spudded.
Mitchell et al's No. 1 Dunnaway, 330 ft. N, 990 ft. E, Sec. 7, T.T.R.R. Sur. ..... Bldg. rotary rig.
Prairie O. & G. Co.'s No. 1 Read, C SW, J. M. McDonald Sur. ..... T.D. 3,223 ft; plugging back.
Sinclair O. & G. Co.'s No. 1-C Johnson Bros., 330 ft. N and W, NE, Sec. 32, Blk. Y, A.&B. Sur. ..... Drlg. 3,092 ft.
Sinclair O. & G. Co.'s No. 1-A Johnson Bros., 330 ft. N, 430 ft. E, NW, Sec. 32, Blk. Y, A.&B. Sur. ..... Drlg. 1,760 ft.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... S.O. 3,065 ft. and 3,108-10 ft; S.D. 3,110 ft.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... Lowering 5 3/16-in. csg; T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. N, 330 ft. E, W½ SE, Sec. 135, T.&N.O. Sur. ..... Rig on ground.
Delmar Oil Co.'s No. 1-A Jones, 330 ft. N, 990 ft. E, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ..... Estimated 100,000,000 ft. gas 3,090 ft; drlg. 3,200 ft.
Gulf Prod. Co.'s No. 1 Dare, C SE, Sec. 312, Blk. 44, H.&T.C. Sur. ..... Rig up.
Home Gas Co.'s No. 1 Reeder, 330 ft. N and W, N½ E½ NE, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... 25,000,000 ft. gas 3,139-3,200 ft; T.D. 3,485 ft; C.O; I.P. 60 bbls. oil and 10 bbls. wtr.
Morton et al's No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... Cellar.
Shamrock O. & G. Co.'s No. 1 Sullivan, 330 ft. S and E, NE, Sec. 139, Blk. 3-T, T.&N.O. Sur. ..... Drlg. 1,200 ft.
Sunray Oil Co.'s No. 1 C. R. Jones, 330 ft. E, 330 ft. S, W½ SW, Sec. 164, T.&N.O. Sur. ..... T.D. 3,075 ft; to kill 101,000,000 ft. gas; to deepen; C.O.
Sunray Oil Co.'s No. 2 Jones, 330 ft. S, 990 ft. E, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.
Texas Interstate P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 6, Blk. B-10, E.L.&R.R. Sur. ..... Drlg. 2,430 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 530 ft.

The Business Lesson of 1930

Has Been an Outstanding Principle of Development With the Hercules Supply Company

The outstanding lesson taught by the severe decline in business that set in late in 1929 and existed through most of 1930 is that it pays to keep overhead down and individual service up.

Throughout its ten years of progress, this has been a cardinal principle of development with the Hercules Supply Company.

The aim has been to

have fully stocked stores at only active and convenient locations and to cut out all deadwood in stock and locations. Active, alert, with all sails trimmed and decks stripped for action, this company has been able to render a quick service on quality lines with the minimum of red tape.

You can get what you want from the Hercules Supply Company and you can get it quick.

—◆—

[STORES *at the most strategic locations in Texas and New Mexico.*]

HERCULES SUPPLY COMPANY

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EVERYTHING FOR OIL WELLS

Spang Jars
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"Lucey," "Dreadnaught," "Regan" Rotary Tools

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Baker Oil Tool Products
Walworth Valves, Fittings
Penberthy and Chicago Injectors
American Bull Ropes and Cat Lines
Oil W. Imp. Control and Oil Savers
Guiberson Tubing Catchers, Swabs, etc.
Hughes Rock Bits, Gate Valves, Core Barrels

General Office: FORT WORTH

STORES: Pampa, Texas—Pettus, Texas—Refugio, Texas—Wink (Pyote), Texas
Vernon, Texas—Van, Texas—Hobbs, New Mexico

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... Rotary rig.
Chambers et al's No. 1 Herring, CNL, Sec. 39, Blk. S, G.C.&S.F. Sur. ..... S.D. 680 ft.

POTTER COUNTY

Texas Interstate P. L. Co.'s No. 1 Rockwell, C N½ S½, Sec. 102, Blk. 46, H.&T.C. Sur. ..... Spudded.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 ..... S.D. 1,250 ft.

WHEELER COUNTY

Devore & Robinson's No. 1 Keeley, 2,310 ft. S and E, Sec. 33, Blk. A-4, H.&G.N. Sur. ..... Rotary rig.
Guernsey Oil Co. et al's No. 1 Sewell, 320 ft. N and E, Sec. 38, Blk. 13, H.&G.N. Sur. ..... Fishing 2,080 ft; S.G. 1,985 ft.
McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H. &G.N. Sur. ..... S.D. 2,300 ft.
Mid-Kansas O. & G. Co.'s No. 1 Harvey, 660 ft. S and W, NE, Sec. 56, Blk. 33, H.&G.N. Sur. ..... S.D. 1,460 ft; 5,000,000 ft. gas 1,425-40 ft.
Wischkamper et al's No. 1 Kisor, 330 ft. N and E, SW Sec. 33, Blk. 17, H.&G.N. Sur. ..... U.R. 8¼-in. csg. 2,402 ft.
Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ..... S.D. 1,853 ft.
Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. ..... S.D.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 57)

Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. ..... Shut down 3,750 ft.; flowed 110 bbls. on July 12, shut in for storage.
Southern Crude Oil Pur. Co.'s No. 2 Cowder & Co., 660 ft. from S and W of NE cor. Sec. 34, Blk. 43, Twp. 1n, T.P. Sur. ..... Building rig.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Section 46, J. M. Day Sur. ..... Shut down 3,089 ft.

FISHER COUNTY

Condor Pet. Co.'s No. 1 Wilson, 330 ft. from N and 1,300 ft. from W, Sec. 6, W. E. Richardson Sur. ..... Fishing 1,685 ft.
Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Section 200, B.B.B.&C. Sur. ..... Shut down 3,130 ft.
Cranfill & Reynolds' No. 3 Willingham, 330 ft. from S and E of Sec. 307, B.B.B.&C. Sur. ..... Shut down 3,090 ft.
The Texas Company's No. 2-A Stephens, 330 ft. from S and E, Sec. 79, Blk. 1, H.&T.C. Sur. ..... Drlg. 1,980 ft.
The Texas Company's No. 1-B Teagarden, 1,990 ft. from S and 440 ft. from E, Sec. 3, W. F. Richardson Sur. .. Drlg. 2,330 ft.

GAINES COUNTY

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE, Sec. 4, Blk. A-8, P.S.L. Sur. ..... Bldg. standard rig.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ..... Spudded and shut down.

GLASSCOCK COUNTY

F. H. E. Oil Co.'s No. 1 Meek, 1,650 ft. N and E parallel to section lines of SW cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. ..... Drlg. 2,120 ft.
Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. .. Total depth 2,956 ft.; shut down.
World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor. Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur. .. Shut down 660 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor. Sec. 139, Blk. 29, W.&N.W. Sur. ..... Sulphur water 1,433-46 feet; shut down 1,456 ft.
G. F. Getty's No. 1 Snyder, Sec. 27, Blk. 10, Twp. 1s, SW cor. of NE of NE ..... Drlg. 2,765 ft.
Greene O. & R. Co. et al's No. 1 Denman, 330 ft. from N and W of E half of NE, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ..... Swabbed 105 bbls. 24 hrs., part time; cleaning out; total depth 2,826 ft.
Magnolia Pet. Co.'s No. 1 Kelley Roberts, 330 ft. S and E, Sec. 112, Blk. 29, W.&N.W. Sur. ..... Bldg. standard rig.
Merriwether's No. 1 Smith, 150 ft. from S, 2,400 ft. from W, Sec. 45, Blk. 33 ..... 2,000 ft. water in hole; shut down 3,270 ft.; 2,000 ft. sulphur water in hole; will abandon.
Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ..... Shut down 261 ft.

HUDSPETH COUNTY

Theison's No. 1 University, 3,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E ..... Spudded 35 feet and shut down.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 ..... Shut down 3,155 ft.

IRION COUNTY

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E, Sec. 3, Blk. 3, H.&T.C. Sur. ..... Shut down 1,020 ft.
Cromwell et al's No. 2 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,320, G.C.&S.F. Sur. .. Shut down 1,712 ft.; show oil 1,621-25 ft.
Dixie Oil Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... Cellar; deep cable tool test.
Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land ..... Underreaming 1,395 ft.; slight show oil 1,390-95 ft.; will test.
Williams & Williams' No. 1 Noelke, 300 ft. from N and 1,020 ft. from E, Sec. 8, City of San Antonio Sur. ..... Drlg. 3,000 ft.
F. F. Webb's No. 1 W. H. Williams, 200 ft. from E and 750 ft. from S line, SW of NE Sec. 10, Gonzales County School Land ..... Shut down 100 ft.

JONES COUNTY

McBest et al's No. 1 Roberts ..... Total depth 1,000 ft.
Union Oil Co. of Nevada et al's No. 1 Hedrick, 300 ft. from N and W of 91.4-acre farm in G. Martinez Sur., Abst. 262, Sub. 5 ..... Drlg. 125 ft.
S. C. Yingling et al's No. 1 Cade, 330 ft. from N and W from SE cor. of NW of Sec. 17, Blk. 19, T.P. Sur. ... Drlg. 250 ft.

LOVING COUNTY

Cromwell et al's No. 1 Wheat & Ramsey, 2,310 ft. from NE and 330 ft. from NW Sec. 80, Blk. 1, W.&N.W. Sur. ..... Location.
Douglas et al's No. 1 Wheat & Ramsey, 330 ft. from SE and 2,310 ft. from SW Sec. 83, Blk. 1, W.&N.W. Sur. ..... Location.
Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines, Sec. 90, Blk. 1, W.&N.W. Sur. ..... Drlg. 3,895 ft.
Henshaw et al's No. 2 Reagan & McElwain, 1,650 ft. from SW and 990 ft. from SE, Sec. 34, Blk. 7, W.&N.W. Sur. ..... Rig.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 3,283 ft.
Independent O. & G. Co.'s No. 2 Wheat, 990 ft. from NW and 330 ft. from SW, Sec. 85, Blk. 1, W.&N.W. Sur. .. Shut down 3,303 ft.
Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ..... Spudded 140 ft.; shut down.
Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 33, H.&T.C. Sur. ..... Rigged up and shut down.
Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. ..... Shut down 4,200 ft.
Rush et al's No. 1 Wheat, 330 ft. from NW and SW, Sec. 77, Blk. 1, W.&N.W. Sur. ..... Cellar.
Slagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W, Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. ..... Spudding 30 ft.
California Co.'s No. 5 Reagan & McElvain, 990 ft. from NW and 330 ft. from NE of Sec. 84, Blk. 1, W.&N.W. Sur. ..... Drlg. 2,540 ft.
California Co.'s No. 6 Reagan & McElvain, 330 ft. from SW and 1,650 ft. from SE, Sec. 84, Blk. 1, W.&N.W. Sur. ..... Drlg. 1,430 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 330 ft. from S and W, Sec. 1, B.S.&F. Sur. ..... Shut down 1,814½ ft.
Barnett et al's No. 4 Callan City Co., 1,200 ft. from S and 2,200 ft. from W, Sec. 1, B.S.&F. Sur. ..... Machine.
Panhandle Ref. Co.'s No. 2 Eckhart, 1,320 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. ..... 500,000 ft. gas with show oil 2,945 ft.; shut down 3,200 ft.; to plug back to 2,955 ft. to save gas.
Priest's No. 1 Sorrell, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. ..... Shut down 2,490 ft.

MIDLAND COUNTY

Kerwin et al's No. 1 Mathen, 2,310 ft. from N and 335 ft. from W line, Sec. 40, W. L. Gray Sur. ..... Underreaming 2,720 ft.

MITCHELL COUNTY

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. Sur. ..... Shut down 3,112 ft.; top pay 3,038-75 ft.; shot 270 qts. 3,020-92 ft.; swabbed 40 bbls. in 24 hrs.
Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W, parallel to section lines of NE cor. Sec. 8, Blk. 27, T.&P. Sur. ..... Spudded 10 ft. and shut down.

PECOS COUNTY

Bell et al's No. 1 Eaton, 2,310 ft. from NE and 990 ft. from SE, Sec. 33, Blk. 3, H.&T.C. Sur. ..... Location.
Bell et al's No. 1 Schaff & Blackman, 2,310 ft. NE and 330 ft. NW of E cor. Sec. 37, Blk. 3, H.&T.C. Sur. .. Running 6⅝-in. casing 1,564 ft.
Cardinal Oil Co.'s No. 1-G Tippett, 750 ft. S and E Sec. 62, Blk. 194, G.C.&S.F. Sur. ..... Location.
Dittman's No. 1 Jackson, 2,310 ft. from NE and 330 ft. from NW, Sec. 28, Blk. 3, H.&T.C. Sur. ..... Moving in machine.
Dittman's No. 2 Eaton, 990 ft. from SW and 330 ft. from SE, Sec. 35, Blk. 2, H.&T.C. Sur. ..... Location.
Dittman's No. 1 Eaton, 330 ft. from NE and SE, Sec. 37, Blk. 3, H.&T.C. Sur. ..... Spudding.
Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. ..... Fishing 6,170 ft.
Humble Oil & Ref. Co.'s No. 1-B Thoman, 1,608 ft. from N and 4,062 ft. from E of Sec. 98, Blk. OW, G.C.&S.F. Sur. ..... Drlg. 3,510 ft.
Lewis & Slagel's No. 1 Bell, 330 ft. from N and W of SE Sec. 12, Blk. 30, Twp. 1s, T.&P. Sur. ..... Location.
Mann's No. 1 Schraff & Blackman, 3,000 ft. from SW and 990 ft. from SE Sec. 32, Blk. 3, H.&T.C. Sur. .... Location.
McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 104, G.C.&S.F. Sur. ..... Location.
McCarty Oil Co.'s No. 3 Gray, 700 ft. from N and 2,260 ft. from W, Sec. 591, G.C.&S.F. Sur. ..... Drlg. 1,154 ft.
Messenger et al's No. 1 Butz, 1,830 ft. from NW and 1,170 ft. from SW, Sec. 54, Blk. 10, H.&G.N. Sur. .... Fishing 1,105 ft.
Mid-Kansas O. & G. Co. et al's No. 1-A Sellman, 250 ft. from S and 330 ft. from W Sec. 12, Blk. 194, G.C.&S.F. Sur. ..... Location.
J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL Sec. 1, Blk. 119, G.C.&S.F. Sur. ..... Shut down 1,700 ft.
J. D. O'Mara's No. 1 Bennett, 593, 1,460 ft. from S 150 ft. from E, G.C.&S.F. Sur. ..... Total depth 1,230 ft.; top pay 1,089 ft.; plugged back to 1,185 ft.; will drill deeper.
J. D. O'Mara's No. 1 Streety, S of Sec. 1, W. P. Howard Sur. ..... Shut down 2,210 ft.; fishing.
Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. Sur. ..... Shut down 2,440 ft.; flowing sulphur water.
Perren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. ..... Fishing 1,765 ft.
Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W, Sec. 13, Blk. 194, G.C.&S.F. Sur. ..... Total depth 1,920 ft.; top pay 1,892 ft.; flowing 25 bbls. per day.
R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C. Sur. ..... Spudded and shut down.
Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ..... Drlg. 4,679 ft.
Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ..... Shut down 405 ft.
Side & Side's No. 1 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.C. Sur. ..... Shut down 2,955 ft.
Schilling & Slaughter's No. 1 Yates, 1,580 ft. N and 150 ft. E of NW cor. Runnels County School Land, but located in Sec. 70, Blk. 1, I.&G.N. Sur. ..... Shut down 357 ft.
Southern Crude Oil Pur. Co.'s No. 1 Scharff & Blackman, 4,550 ft. 40° E and 330 ft. 50° W of most southerly cor. Sec. 28, Blk. 3, H.&T.C. Sur. ..... Rig up.
California Co. et al's No. 1 Thomas, 990 ft. from NW and SW, Sec. 31, Blk. 34, H.&T.C. Sur. ..... Location.
The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor. Sec. 9, Blk. 131, T.&St.L. Sur. ..... Shut down 3,504 ft.
Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. .... Drlg. 2,410 ft.
Williams & Moran's No. 1 Heiner Est., 450 ft. from N and 2,490 ft. from W of Sec. 590, G.C.&S.F. Sur. ..... Drlg. 980 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 900 ft. from W of Sec. 25, Blk. 9 ..... Drlg. 7,939 ft.
Slick Estate et al's No. 1 August, C SE Sec. 1,216, G.C.&S.F. Sur. ..... Drlg. 1,060 ft.
Texon O. & L. Co.'s No. 4-B University, 1,130 ft. from N and W of Sec. 26, Blk. 9 ..... Drlg. 6,096 ft.

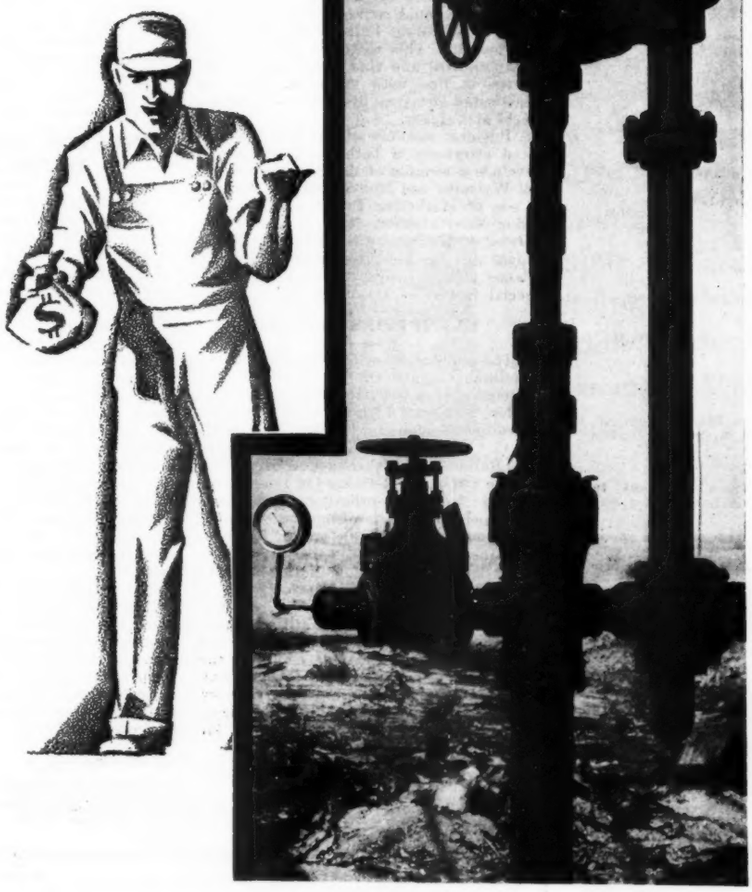
REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 380 ft.
Black & Kink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 50 ..... Top pay 1,820 ft.; shot 15 qts. 1,821-30 ft.; shut down 1,860 ft.
Riggs & Smith's No. 1 Lee Monroe, 2,190 ft. from NE and 330 ft. from NW line, Sec. 34, Blk. 8, H.&L.N. Sur. ..... Shut down 176 ft.
Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from NW line, Sec. 34, Blk. 7, H.&L.N. Temporarily abandoned.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. .. Shut down 4,415 ft.
California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. ..... Cleaning out; total depth 4,246 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Fishing for bailer 1,695 ft.
George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E Sec. 262 ..... Show oil 2,028 ft.; shut down 2,643 ft.

Save money this way



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WESTCOTT VALVES

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW Sec. 56, Blk. 1, G.H.&S.A. Sur. ..... Drlg. 5,605 ft.
Tess & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A. Sur. ..... Shut down 3,960 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Shut down 750 ft.
Westyde et al's No. 1 Meador, 1,320 ft. from S and E of Sec. 661, G.C.&S.F. Sur. ..... Location.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,200 ft. from N, 1,470 ft. from W, G.H.&S.A. Sur. ..... Shut down 5,027 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ..... Pumping 20 bbls. per day for fuel oil; total depth 3,501 ft.
Camp Spring Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N. Sur. ..... Shut down 875 ft.
I. D. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 4,970 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. ..... Location.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 155, Blk. 97, H.&T.C. Sur. ..... Underreaming 12½-in. casing; total depth 800 ft.
Mid-Kansas O. & G. Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ..... Underreaming 4,373 ft.

STERLING COUNTY

Beesley et al's No. 1 Foster, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 22, H.&T.C. Sur., but in Sec. 16, Blk. 21, Twp. 4s, T.&P. Sur. ..... Shut down 515 ft.

TAYLOR COUNTY

Adams et al's No. 2 Lowe, 150 ft. from N and 750 ft. from W, Sec. 19, Guadalupe County School Land.... Est. 1,000,000 ft. gas 2,301 ft.; shut down 2,560 ft.
Eastland Oil Co. et al's No. 2 Hunter, 3,418 ft. from S and 3,174 ft. from E of William R. Ellis Sur. ..... Drlg. 2,230 ft.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Cleaning out to run 3-in. casing; total depth 6,250 ft.
Hucony Oil Co. et al's No. 1 Richie, C SE Sec. 10, Blk. A, S.P. Sur. ..... Shut down 2,570 ft.
Sanger et al's No. 1 City of Abilene, 330 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land ..... Drlg. 1,385 ft.
Sanger O. & R. Co.'s No. 1 Osborn, 330 ft. from SW of SE Sec. 68, Blind Asylum Land ..... Rigged up and shut down.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... Shut down 2,669 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry Sur. ..... Shut down 3,150 ft.
Milham Corp. of Texas' No. 1 R. M. Bassett et al, 150 ft. from N line and 2,640 ft. from E and W lines of Sec. 76, Blk. Y, James Bass Sur. ..... Location.
Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.
Mrs. J. B. McPhees' No. 1 Sam Belt, C Sec. 16, Blk. D-7, E.L. Sur. ..... Shut down 880 ft.; moved off machine.
Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur. .. Drlg. out cement 4,730 ft.; total depth 5,229 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G. Sur. ..... Shut down 640 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Shut down 760 ft.; show oil and gas 725 ft.
Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor. Sec. 20, Blk. 24, H.&T.C. Sur. ..... Location.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,626, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur.... Shut down 1,835 ft.
Phillips Pet. Corp.'s No. 1 Guiden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Shut down 5,010 ft.
Pratt & Hancock's No. 1 Lewis, 450 ft. S and 518 ft. E of SE cor. of James Webb Sur. No. 77, located in Albert Black No. 75 ..... Location.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Survey No. 2 ..... Location.

UPTON COUNTY

Duffey et al's No. 2 McClintic, 328 ft. N and 967 ft. E of Sec. 206, Blk. F, C.C.S.D.&R.G.N.G. Sur. ..... Shut down 2,660 ft.
Humble O. & R. Co.'s No. 1 Damron et al, 330 ft. from N and W Sec. 192, Blk. F, C.C.S.D.&R.G.N.G. Sur. ... Location.
T. P. Coal & Oil Co.'s No. 1 King Ranch Oil & Lignite Co., 2,310 ft. from N and 990 ft. from W, Sec. 28, Blk. 2, M.-K.-T. Sur. ..... Drlg. 190 ft.
Weekly Oil Corp.'s No. 1 Shirk, 468 ft. from S and 2,217 ft. from E, Sec. 15, Blk. 3, M.-K.-T. Sur. ..... Drlg. 2,300 ft.
Weekly Oil Corp. et al's No. 1 McClintic, 1,650 ft. from N and 330 ft. from E Sec. 206, Blk. F, C.C.S.D. &R.G.N.G. Sur. ..... Cable tool test; derrick.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, L&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Fishing 6,780 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 23, Blk. D-8, E.L. Sur. ..... Shut down 3,025 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sec. 47, Blk. Y. Shut down 4,009 ft.

WARD COUNTY

Alpine Oil Co.'s No. 2 Boogher, 2,200 ft. from NW and 1,800 ft. from SW lines, Sec. 11, Blk. 5, H.&T.C. Sur... Drlg. 800 ft.
Black & Massey's No. 1 Allen, 2,108 ft. from NW and 2,100 ft. from SW Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 230 ft.
Empire Gas & Fuel Oil Co.'s No. 1 John Sealy estate, 330 ft. from S and 1,650 ft. W of NE cor., Section 5, Blk. F, T.&M.M. Bros. Sur. ..... Spudding 100 ft.
Grand Falls Oil Co.'s No. 1 Blair and Boogher, 500 ft. from SW and 1,160 ft. from NW Sec. 11, Blk. 5, H.&T.C. Sur. ..... Location.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur.... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.
Kugle et al's No. 1 Wallace, 330 ft. from SE and 1,263 ft. from SW Sec. 19, Blk. 34, H.&T.C. Sur. ..... Spudding.
Magnolia Pet. Co.'s No. 1 Sealy, 330 ft. from S and E of NE cor. Sec. 46, Blk. 2, G.M.M.B.&A. Sur. ..... Shut down 3,056 ft.; flowing average 50 bbls. per day.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. ..... Shut down 1,200 ft.
Richardson et al's No. 5 O'Brien et al, 330 ft. from N and 2,970 ft. from W of Sec. 5, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 2,700 ft.
Rickford & Smith's No. 1 Johnson, 120 ft. NE and 175 ft. SE of N cor. Sec. 7, Blk. 32, H.&T.C. Sur., but located in Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 500 ft.
California Co. et al's No. 1 Lanham, 990 ft. from NE and SE, Sec. 35, Blk. 34, H.&T.C. Sur. ..... Building rig.
California Co.'s No. 1 Gordon, 330 ft. from NE and SE Sec. 6, Blk. 34, H.&T.C. Sur. ..... Location.
T. P. Coal & Oil Co.'s No. 1 James, 330 ft. from SW and SE, Sec. 5, Blk. 34, H.&T.C. Sur. ..... Location.
Shipley et al's No. 5 Hayslett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Shut down 2,520 ft.
T. P. Coal & Oil Co.'s No. 1 Barker, 330 ft. from SW and NW of Sec. 27, Blk. B-29, Public School Land ..... Shut down 2,425 ft. for storage.
California Co.'s No. 1 Allen, 2,310 ft. from NE and 330 ft. from SE, Sec. 30, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,717 ft.

WINKLER COUNTY

Magnolia Pet. Co.'s No. 1 Bashara, 1,650 ft. from S and 2,310 ft. from W, Sec. 17, B-3, P.S.L. Sur. ..... Fishing 268 ft.
Magnolia Pet. Co.'s No. 3 Scarborough, 1,650 ft. from N and 990 ft. from W of Sec. 1, Blk. 77, Public School Land ..... Flowing 90 bbls. per day by heads; total depth 2,876 ft.
A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE Sec. 4, Blk. B-5, Public School Land ..... Shut down 3,506 ft.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor. Sec. 2, Blk. B-5 ..... Shut down 4,639 ft.
Turman et al's No. 1 Daugherty, 2,310 ft. from E and 2,310 ft. from S line, Sec. 16, Blk. 74, Public School Land ..... Coring 3,112 ft.

ROCKY MOUNTAIN OIL AND GAS ASSOCIATION

Walter F. Brittan, secretary of the Rocky Mountain Oil and Gas Association, announces that the association will hold its sixth annual convention at the Rainbow Hotel, Great Falls, Mont., December 12 and 13. This will be a joint meeting with the Oil and Gas Association of Alberta in line with a custom that was instituted last year by a joint convention held at Calgary.

Business sessions will be held morning and afternoon of both days, which will include a meeting of the state committees of Wyoming and Montana of the National Code of Marketing Practices. For evening entertainment features the Mystic Order of Wildcats will hold sway on one night and the annual cabaret dinner and dance will, as usual, be the outstanding social feature of the meeting.

EXEMPTIONS REFUSED

The application of the Champlin Oil & Refining Co. and the Marco Oil Co. for exemption from the statewide oil proration orders was denied by the Oklahoma Corporation Commission during the week. C. C. Champlin, president of the Champlin Refining Co., gave notice of appeal.

The Champlin Refining Co. renewed its attempt to lift the proration order of the Oklahoma Corporation Commission by demanding in a petition before the Commission that the order of October 28, cutting the crude oil production in the State to 550,000 bbls., be set aside.

C. C. Champlin, president of the Champlin Refining Co., testified before the commission he was opposed to the entire system of proration, claiming the order was price fixing and that he was unable to make a profit at the refinery because the company's wells in the Oklahoma City Pool were shut down. He stated the umpire for the commission were prorating all the fields fairly and that no partiality was being shown in the Oklahoma City Field.

Oklahoma City is menaced by a fire hazard from gas in the north end of the Oklahoma City Field where a large gas pressure is being retained by proration, C. C. Champlin said. He believed the commission could remove the fire hazard by permitting all the wells in the north end of the pool to flow wide open until the gas pressure was lowered.

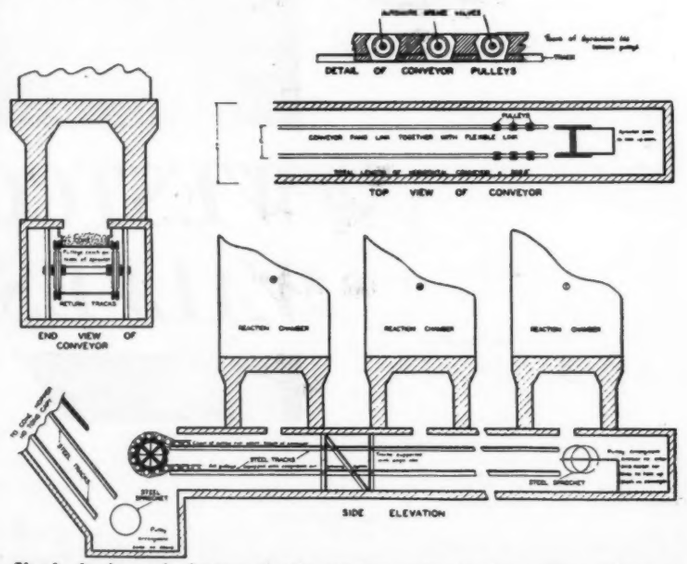
CONVEYOR SIMPLIFIES HANDLING OF COKE

(Continued from Page 34)

Refiners Corp.'s installations the entire system which has Alemite equipment, is lubricated daily with pressure guns. Water is sprayed into the reaction chambers for cooling purposes for some time after the coke is removed. As hot water and steam this cooling water is allowed to drain into the tunnel dropping on that part of the conveyor which is beneath the reaction chamber. This hot water removes the grease from the conveyor but when it is lubricated daily no trouble has been experienced.

The conveyor has done away with practically all shoveling and other manual handling of the coke. It has proved to be an additional safety factor. The operator in charge of the engine and conveyor can see the entire operation and stop the conveyor instantly when necessary.

The conveyor unit was installed by the Jeffrey Manufacturing Co. The company has installed a large number of conveyors in coal mines and similar industrial uses, the Producers & Refiners Corp.'s installation being specially designed to meet the requirements peculiar to the handling of petroleum coke at high temperatures.



Sketch showing main features of coke conveyor system at Parco, Wyo., refinery of Producers & Refiners Corp.

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MICHIGAN FIELDS

(Continued from Page 55)

2,000 feet and pay sands were struck at 2,007-10 feet, total depth of the well. It swabs about 50 to 60 bbls. a day.

One other well drilling in the field is the Cimusk Oil Co.'s No. 2 Paulson and others, SE NE, Section 8-10n-16w, Muskegon Township.

Three wildcat tests, two in Fruitland Township and the other in Fruitport Township, are shut down at 200 to 300 feet.

Two Michigan oil fields are producing an aggregate of about 7,500 bbls. a day, according to R. G. Bechtel, field superintendent of the State for the Dixie Oil Co. Greatest production is in the Mount Pleasant area where four pipe lines are running about 5,400 bbls. a day with the largest line, that of the Pure Oil Co., prorating its runs from more recently completed wells. The Roosevelt Oil Co., operator of an independent pipe line and refining plant, is running about 1,500 bbls. a day both from the field and in the plant recently improved to run naphthas. The Old Dutch Refining Co. of Muskegon is running about 500 bbls from the Leaton Pool and shipping it by rail to be refined at the company's Muskegon plant. The Wellman Oil Co. of Grand Rapids also is reported to be running about 200 bbls. a day for shipment by tank car to various refineries. The Pure Oil Co. is running the rest, or about 3,200 bbls. a day.

At Muskegon three pipe lines are running an average of about 700 bbls. a day each for a total of 2,100 bbls. The Old Dutch Refining Co. is running about 800 bbls. to its refinery. The Dixie Oil Co. is running about 700 bbls. a day into storage for boat shipment to Whiting, Ind., refineries of the Standard of Indiana, and the Wellman Oil Co. is running the rest, or about 600 bbls. a day, to the H. H. Cross Refining Co. plant in the field.

LA.-ARK. FIELDS

(Continued from Page 51)

NW NE, Section 23-7-4, LaSalle Parish, shown on a map as being in the bed of the lake. Gulf Refining Co. has made location in the SE NE, Section 13-13-8, Natchitoches Parish, for No. 1 Bodcaw and has rig up. Location is about 16 miles east of Bull Bayou production in Red River in a territory that was given geophysical attention. T. G. Shaw's No. 1 Wilkinson, Section 4-12-10, Red River Parish, is standing 1,700 feet in oil, total depth 2,838 feet. Two weeks ago the bailer stuck while testing the show and in that time oil has risen 1,000 feet in the hole.

G. G. Nesbitt, who assembled a block of 8,000 acres in southwestern Webster Parish centering on Section 16-18-10, a mile northwest of Doyline, has assigned to L. D. Higgins 5,000 acres of the block for a well to go 3,000 feet and Higgins has rig up in the NW cor. NE SW of Section 16. Several years ago two or three holes were drilled in this "Post Oak Flat" country and more recently it has been pretty thoroughly worked over with torsion balance and magnetometer.

Reports of shows in two East Texas wildcats, one in Shelby County near Teneha and the other in Panola, 2 miles north of Joaquin, came along in the latter part of the week. Knox and others' No. 1 Dunham in the Charles Haley Survey of Panola County was reported to have had a small show at 2,732 feet and set 6⅝-inch at 2,670 feet. The show in G. R. Ridgeway's No. 1 Parker in the Jessie McKelvey Survey of Shelby County was a comparatively small amount of gas at high pressure with salt water. It was open for only a few minutes and blew part of the drilling mud out of the hole and reports first were that there was some oil with it, but this was not verified. Total depth is 3,015 feet. Benedum & Trees, or Loring Oil Co.'s No. 1 Nona Mills in the James Mason Survey of Sabine County was arranging for a drill stem test in lime and shale at 4,278-96 feet. Crook and others have taken 5,000 acres around Leary, Bowie County, for a well to go 3,500 feet with the further provision that if it is dry they have 90 days in which to start a second 3,500-foot hole and if that also is dry, 60 days in which to start a third.

No. 1 Greeson to Be Deepened

A. L. Buck and others' No. 1 Greeson in Section 25-12-32, Little River County, Arkansas, shut down at 2,505 feet since July, is to be revived and deepened following a trade with G. R. Stevens of Shreveport. Stevens was given a 51 per cent interest in the well and the "40" it is on and an assignment of 2,000 acres of the original 4,000-acre block in consideration of deepening the well to the lower Trinity at around 2,800 feet to explore a sand found by Grotte and others in No. 1 Allen, Section 31-12-31, several years ago. Stevens in turn has assigned a 25½ per cent interest in the well and 40 acres and 1,360 of the 2,000 acres to George Greer of Dallas, Tex., who will do the drilling.

E. & F. Oil Co.'s No. 1 Beck, Section 36-15-26, Miller County, is full of salt water from 2,961 feet and will pull the short string of 4½-inch set at 2,958 feet and reset with a full string preparatory to trying another test of 2 feet of sand that showed oil two weeks ago. The location is 2 miles south of the Lenz producer whose No. 3 Johnson on the discovery lease in Section 24-15-26 is drilling at 2,100 feet. No. 2 Johnson apparently is a failure at 3,100 feet, but has not been abandoned.

Graves Brothers are arranging to go deeper with No. 1 Walker in Section 9-14-18, Ouachita County, 10 miles north of Mount Holly production. They had a small pumping unit rigged up on the derrick floor that got about 50 bbls. of fluid, 90 per cent water, out of the well from 1,873 feet. Not satisfied with the 100 bbls. of fluid, half of it water, Crosbie and others are deepening No. 1 Murphy, Section 13-16-16, Union County, with cable tools.

Scheduled for Deep Test

This semiwildcat half a mile southwest of the nearest Smackover production was scheduled for a deep test to go 4,000-5,000 feet but was put to pumping after it had shown for a commercial producer from 5 feet of sand at 2,740 feet.

Marine Oil Co.'s No. 1-F Winn, Section 10-18-13, Urbana district of Union, was put on production, but final disposition has not been determined since it started off with 1,000 bbls. of fluid, 90 per cent water, from 3,604 feet. Oil Fields Corp.'s No. 1 Simmons in Section 13-18-13 was coring at 3,553 feet.

In northern Arkansas J. W. Baxter has temporarily abandoned No. 2 Hallin in the center of Section 17-16-26, Madison County, at 405 feet and has begun drilling No. 3 Hallin in the NE SW, Section 1-17l-26.

Recent information from Conway was to the effect that geologists and land men have been active again in Faulkner, Cleburn and White Counties, which activities were construed to mean a revival of drilling. Only one well is under way in the three counties, Donnely & Craver's No. 1 Donophan in the SE NW, Section 33-11-9, Cleburn County, about 5 miles north of Heber Springs, and it is shut down for casing at 3,640 feet. Letona Syndicate's No. 1 Letona, NW SW, Section 35-9-8, White County, 10 miles or so north of Searcy, was abandoned last July at 3,650 feet after a series of gas shows.

Efforts are being made, it was reported, to reorganize the Gold Creek Oil & Gas Co., which drilled to 3,782 feet on No. 1 Stermer in Section 17-4-13 Faulkner, a few miles south of Conway, and claimed to have had shows warranting a second attempt. Cable tool rig was up for No. 2, 1,000 feet south of No. 1, but the hole was not spudded.

Jackson Gas District Extended

Producing area of the Jackson gas district in Mississippi was extended half a mile south and west of Gulf Refining Co.'s No. 1 City of Jackson in Section 10, the nearest producer, when Hawkeye Gas Co. completed No. 1 Webster, NE NW, Section 15-5-1e, Hinds County. Top of the chalk was at 2,474 feet and the well was estimated at 20,000,000 feet, total depth 2,476 feet. Across Pearl River, which splits the field in two, Pioneer Oil & Gas Co.'s (Dr. S. D. Raymond and others) No. 1 Graves in Section 12-5-1e, Rankin County, topped the chalk at 2,391 feet and made an estimated 30,000,000 feet of gas at 2,403 feet. Gulf Refining Co.'s No. 1 Hamilton a quarter mile southwest of this well, had slight shows of heavy oil such as that found in the Rainey well in Section 13 at 2,505 feet, in breaks in the chalk at 2,620-60 feet but went on without testing and was coring chalk at 2,857 feet.

Half a mile south of the Hawkeye's extension Love Petroleum Co.'s No. 1 Maley, SE NW, Section 15-5-1e, is still flowing 15,000,000 feet of gas with 10,000 bbls. of salt water and about 200 bbls. of 13 gravity oil from 2,494 feet when opened. Mississippi Petroleum Co.'s No. 1 Orphanage, SE SE, Section 28-6-1e, on the north of Jackson, cemented 6⅝-inch at 2,481 feet and is drilling at 2,710 feet on No. 1 Investment, NE SW, Section 14-5-1e.

Arkansas Natural Gas Corp. is reported having added to its Mississippi interests by acquiring the gas rights on 3,000 acres of the Pure Oil Co.'s holdings around Jackson for a price reported to have been $38,000. The trade was made with C. R. Hoffer of El Dorado, Ark., who was said to be acting for the Arkansas Natural Gas Co.

GULF COAST FIELDS

(Continued from Page 48)

150 bbls. from the old sand at 3,665 feet. Others were Edwin M. Jones' No. 2-A Mitchell, south of the field, flowing 200 bbls., 30 feet of screen set at 5,441 feet; L. L. Smith's No. 1 Powers, City Block 85, flowing 420 bbls. in the first 12 hours on a three-sixteenths-inch and a quarter-inch choke, 2,000 pounds pressure, sand 6,445-59 feet; Morgan Oil Corp.'s No. 1 O'Connor, former producer in sand at 5,471 feet, deepened to 6,453 feet, flowing 150 bbls., 2,200 pounds pressure, 20 feet of screen; Phillips Petroleum Co.'s No. 1 Rose Lambert, 8 feet of screen set at 6,461 feet, flowing 180 bbls. on two quarter-inch chokes, pressure 1,300 pounds.

Saxet Well Abandoned

On the extreme southwest side of the field, Saxet Oil Co.'s No. 12 Clint Heard was abandoned as dry at 6,614 feet. This was a wildcat for deep tests as most of the previous deep development has been on the eastern side of the district. Indication of new activity at Refugio was given with the staking of a half dozen additional locations in both the old and the newer areas.

At Raccoon Bend, Humble Oil & Refining Co.'s No. 11 Thompson in the east extension area of the field, was brought in flowing 118 bbls. the first 24 hours on chokes from sand at 3,250 feet. However, a semioffset, No. 2 Duncan-State, was abandoned as dry at 3,856 feet. The latter is between the Thompson well and No. 2-B Hardy, which several months ago extended production eastward across the Brazos River from Austin into Waller County. Two wildcats northeast of the Raccoon Bend Field were abandoned. These were No. 1-B Remmert, approximately 1,400 feet northeastward from production, and No. 1-B Reece, 7,600 feet northeast of production.

Completions in the new area north of the old Vinton Field included Vinton Petroleum Co.'s No. 10 Gray, 300 bbls. pipe line oil, 3,640 feet; Wilson Broach's No. 2 Wilson, 500 bbls. pipe line oil, 3,617 feet, and Gulf Refining Co.'s No. 69 G. & N. G., 600 bbls. pipe line oil, 3,032 feet. Edgerly Petroleum Co.'s No. 2 McLean, plugged back from the new 3,600-foot sand, where it tested salt water, to a shallower sand at 2,860 feet, bailed dry and was abandoned.

Three More Good Wells

The active development in the recently opened area at East Hackberry, Calcasieu Parish, has resulted in the addition of three good wells. These wells included Calcasieu Oil Co.'s No. 2 Landry, 840 bbls., 20.4 gravity pipe line oil on half-inch choke, three joints of screen set at 2,580 feet; Yount Lee Oil Co.'s No. 33 State, three joints of screen set at 2,687 feet, flowing 1,200 bbls. of fluid, 10 per cent water, on half-inch choke, gravity 17.9°; and the same company's No. 35 State, three joints of screen 2,657 feet, flowing 200 bbls. of fluid, 10 per cent water, gravity 18°.

At Lockport, Vacuum Oil Co.'s No. 6 Bayou State came in flowing 250 bbls. of oil from sand at 4,415 feet but quit flowing. Tubing has been run and at latest report the well was swabbing again. At Saratoga, Rio Bravo Oil Co.'s No. 102-A Cotton is flowing 98 bbls. of oil from sand at 543 feet, the latter being one of a series of good small wells being completed in the newly developed shallow sand.

CANADIAN FIELDS

(Continued from Page 56)

the south and the proven sections of the central field.

In South Turner Valley, an important new development is the resumption of work on Commonwealth Petroleums' No. 1, LSD 7, Section 9-19-2w5. This test last January reached 4,420 feet, when drilling was discontinued owing to what is reported to have been an exceptionally crooked hole. Careful tests indicated the hole was about 800 feet off the vertical. Casing was run to 3,838 feet and a test made of production in the Dalhousie sands, where a fair show of light crude had been encountered. The company has since then taken a little production. In the interval, the original derrick was blown down and a new one had to be built. Contract has now been let to Boller, Sherman & Boller of Tulsa, who drilled East Crest's No. 2-A, to complete the Commonwealth well, and the test is now rigging up. The location is fairly close to East Crest's No. 2-A, and after the hole is straightened the producing horizon in the lime should be reached with less than 500 feet of additional drilling. Commonwealth Petroleums, Ltd., holds 40 acres in Section 9-19-2w5, No. 1 being a mile south and slightly east of the East Crest group, and 2½ miles south of the Home wells.

In Section 16-19-2w5, East Crest Oil Co.'s No. 3, LSD 4, is reported rigged up ready to spud in. Boller, Sherman & Boller of Tulsa have the contract. East Crest's No. 2-A, same LSD, is reported maintaining its normal production around 600 bbls. Miracle Oil's No. 1 is reported making 368 bbls.

Central Turner Valley

In Central Turner Valley, Sioux City Oils' No. 1, LSD 10, Section 1-20-3w5, is reported testing production 1,800 feet in the lime at 6,185 feet. The well, which has established a new record for depth in the lime, has encountered some wet gas in that horizon and if a fair recovery is indicated, will probably take production at this depth till next spring. If production is not satisfactory, the test may be drilled deeper. Okalta's No. 1 is reported making around 140 bbls. and No. 3 is making around 25 bbls.

In Section 12-20-3w5, British Dominion Oil Development Corp.'s No. 3, LSD 6, is drilling in the Blairmore horizon below 3,740 feet and will test the McDougall-Segur sands around 3,850 feet before going deeper. It is planned to take light crude production as long as possible from this horizon.

Drilling in the Foothills

In the southern foothills, Weymarn Petroleums' No. 2, LSD 5, Section 7-6-1w5, is at 2,125 feet and drilling and carrying 8-inch casing. The drill is working in a brown sand above the Fernie shales, and is expected to get the Madison limestone around 2,400 feet. The test already has a wet gas flow estimated around 2,000,000 feet.

On the Monarch structure, Cartier-Majestic's No. 1, LSD 3, Section 36-31-7w5, is reported rigging up and housing the outfit for winter drilling. The test may spud in early in December.

On the Herron structure, Herron Petroleums' No. 1, LSD 3, Section 13-22-6w5, is at 3,264 feet, about 564 feet in the lime, with a considerable flow of gas strongly impregnated with hydrogen sulphide. This gas ate through the drilling line, causing a shutdown till a new line is procured. It is planned to equip the drillers with gas masks.

On the Moose Mountain structure, Sig-

for deep well drilling

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nal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is drilling at 4,129 feet in a hard formation thought to be the capping above the Dalhousie sand. A control head has been secured to handle possible production in this horizon. Traces of light crude are reported seeping up into the hole.

Red Coulee Field

On the Alberta end of the Red Coulee structure, Taylor Syndicate's Vanalta No. 3, Section 4-1-16w4, was shot with 40 quarts of nitroglycerin, resulting in a small increase in production. On the Montana end of the structure, Monalta Oil Co.'s No. 2 Buckley, Section 1-37-4w, bottoming at 2,518 feet, has run 6-inch pipe to shut off water and is starting to drill into production. Monalta's No. 3 Buckley is in steady production.

Border Fields

On the Spring Coulee structure, southern Alberta, Alberta Pacific Consolidated's No. 1, Section 15-4-23w4, is reported drilling in the Colorado shales at 4,214 feet. This is planned for an exceptionally deep test, 7,000 feet or more if necessary.

South and west of Lethbridge, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, is practically ready to spud in. A 2-mile water line has been laid to the river and a gas line is being laid connecting with the Canadian Western Natural Gas Co.'s main line. The test is being drilled jointly by Texas Oil Co. of Canada and Imperial Oil, Ltd., which between them control extensive acreage on the Lethbridge structure. It is expected to spud in this month and drill continuously through the winter.

On the Montana side of the border, Western Natural Gas Co.'s test near Aden has encountered at 2,060 feet depth a gas flow estimated around 2,000,000 feet.

New Dingman Venture

Highwood-Sarcee Oils, Ltd., of Calgary, headed by the veteran oil man, A. W. Dingman, is reported negotiating for acreage on the Two Pine structure in the foothills north and west of Turner Valley. The Two Pine structure is in the Moose Mountain area, and fairly close to the acreage being tested by Signal Hill Oil Co.'s No. 2. The Two Pine structure lies in a line east of the fault, transverse to the strike, running through the Moose Mountain area. This structure was reported on by Dr. G. S. Hume of the Geological Survey of Canada in 1927.

Ribstone Field

In the Ribstone Field, east central Alberta, Raymond L. Cook, of Ribstone Oils, Ltd., has started work on a contract for Algonquin Oils' No. 1, LSD 1, Section 20-45-1w4. Algonquin Oils, Ltd., is controlled by interests associated with Commonwealth Petroleums, Ltd., of Calgary. Machinery and equipment will be moved to location at once, and casing from the abandoned Commonwealth test in the Red Coulee Field has been shipped north. Caridum Oils, Ltd., is reported arranging for a test in Ribstone acreage. A Lloydminster, Saskatchewan, syndicate has secured about 3,000 acres and will drill a test in the north end of the field, at a high point on the structure.

BRITISH COLUMBIA

In the province of British Columbia the Cariboo Oil Co.'s test near Australian is reported drilling below 400 feet. J. F. Harrison Drilling Co. is handling the contract.

In the Sage Creek district of southeastern British Columbia, B. C. Oil & Coal's No. 2, which has been standing at 1,215 feet, is to be completed by contract.

Ontario Crude Bonus

Imperial Oil, Ltd., has announced a bonus of 45 cents a barrel on Ontario crude as a measure of temporary relief to the producers, who were hard hit by the recent reduction. The announcement followed a conference between representatives of the Ontario Crude Oil Producers Association and A. M. McQueen, vice president of Imperial Oil, Ltd. The bonus will continue, it is understood, till the proposed restoration of the government petroleum bounty of 52½ cents a barrel is considered at the session of the federal parliament in February.

Ontario Drilling

In Dawn Township, Lambton County, Ontario, Union Natural Gas Co.'s No. 49, Ellis farm, Lot 19, Concession 1, is estimated 2,700,000 feet. No. 51, Childs farm, SE Lot 20, Concession 1, finished a dry hole at 2,047 feet after getting a very small gas show at 1,660 feet. In the D'Clute Field, Kent County, Union Natural Gas Co.'s No. 18 Ronson farm, N Lot 144, North Talbot Road, Raleigh Township, finished a dry hole at 1,660 feet. This marks the completion of the Union company's program for 1930 in the D'Clute Field. In Mosa Township, Middlesex County, Southern Ontario Gas Co.'s No. 4, W half Lot 16, Concession 3, finished dry.

James Bay Drilling

In Northern Ontario, drilling is being continued by the James Bay Basin Oil Co. on Benson Island, one of the Grey Goose group in the Moose River. Some oil seepage is reported to have been encountered.

In Saskatchewan it is reported that the Pike Lake Oil Development & Exploration Co.'s No. 1 on the Pike Lake structure, 19 miles southwest of Saskatoon, has been abandoned at a depth of 3,200 feet.

In the old Tilbury oil field, Kent County, Ontario, East & West Oil Co. and allied interests are drilling on the Mancell farm near Fletcher. F. H. Stover & Son have the contract.

SOUTHWEST TEXAS FIELDS

(Continued from Page 50)

northeast of its No. 1 Cooksey in eastern Bexar County, late last week was being bailed but it failed to respond. Total depth is 1,512 feet. No. 1 Cooksey was hailed as a discovery well and produced around 50 bbls. daily. Penn is due under its lease to test the Edwards lime in the block before quitting and the Cooksey is producing from the Taylor marl at much less depth than the Edwards.

In the White Point Field, Saxet Oil Co.'s No. 17 Rachel, a deep test in the midst of gas wells producing at around 2,300-2,500 feet, is down 4,892 feet and moving out storage and setting liner. A week ago it was a gas well spraying some 20 bbls. or so of oil and it was understood the amount of gas was too great for the amount of oil under present standards of conservation and the report went out that the well would be deepened. It is now 4,900 feet deep and the company's moving out storage and liner would indicate it was going to test it where it is. It is the first important showing of oil on the San Patricio County side of Nueces Bay to the north. The Saxet company is now working on a program to drill deep tests in the Saxet gas field on the south side of the bay and the White Point Field on the north side of the bay. Its first deep test on the south side proved an oil producer and now the first on the north side is an oil producer. The first on the south side in the Saxet Field was No. 1 Donnegan at 4,091 feet making 1,500,000 feet of gas and 10 bbls. of oil. The company drilled No. 5 Dunn on the south side to 3,885 feet where it was abandoned. This last test was drilled in 1928.

Pettus Area

The area around Pettus developed very little. E. S. Price is working with his two wells on the Weiss farm a few miles south and east of Pettus. No. 1 Weiss is preparing to swab at 4,423 feet and No. 2 is circulating mud at 4,462 feet. They each have had some pretty good showings but have not yet made wells.

Cosden's No. 1 Staltzfus, south of Pettus at 4,500 feet, reached contract depth but is to be deepened. It looked for a time as though it was going to open a new field but the production was too small.

Morgan and Independent Oil & Gas Co.'s No. 1 Quincy is down 5,762 feet and waiting for fuel. This test at one time created a lot of excitement and looked like the sure opening of a new pool but failed to develop enough volume after casing was set at 4,822 feet.

In Travis County Sun Oil Co.'s No. 1 Nagle at 655 feet found some Serpentine with a showing of oil. It is in the territory where Serpentine plugs exist. Casing has been set at 625 feet. It may mean another Serpentine plug field.

Fort Bend Oil Co.'s No. 1 Newberry in southern Karnes, only a few miles north of the Pettus Pool in Bee, has set casing again to test at 2,958 feet. It had a good showing on the first drill stem test and when casing was set developed nothing. They milled through the casing and set a smaller string higher up and will test again on the theory that the first string of casing was set too low.

KANSAS FIELDS

(Continued from Page 46)

troleum Corp.'s No. 1 Miller, SE cor., Section 1-20-2w, made 1,193 bbls. from chat 2,961-72 feet.

Reno County

Alco Royalty Co. and others' No. 1 Kinney, SE cor., Section 16-22-7w, has been abandoned at 3,932 feet.

Rice County

Producers & Refiners Corp.'s No. 2 Thompson, SW cor. SE NW, Section 21-20-10w, has been completed for 960 bbls. in sand 3,327-45 feet.

Sedgwick County

Blackwell Oil & Gas Co. has the rig up for No. 1 Rounds, NE cor., Section 17-27-2, Eastborough Field. Eisenhour and others' No. 1 Horde, SE cor. NW, Section 19-27-2, is a rig, Lot 6, Block K, Eastborough Addition. Blankenship Petroleum Co.'s No. 2 Shaffer, SE cor. NE NW, Section 30-27-2, is rigging up to deepen from 2,971 feet. Eisenhour and others' No. 1 Montgomery, NW cor. SW, Section 19-27-2, has been abandoned at 1,025 feet. Seigel Brothers' No. 1 Soukup, SE cor. NE NW NE, Section 19-27-2, has been completed for 800 bbls. in chat 2,975-87 feet. Magnolia Petroleum Co.'s No. 1 Brady, NW cor., Section 20-27-2, is dry and abandoned at 3,405 feet.

Sumner County

Magnolia Petroleum Co.'s No. 1 Shriner, NW cor. SW, Section 9-33-2, is dry and abandoned at 3,700 feet. Fred Morgan and others' No. 1 Mynes, SW cor., Section 16-35-2, has been deepened from 3,358 feet to 3,385 feet and made 48 bbls.

OKLAHOMA FIELDS

(Continued from Page 42)

and Empire Fields, was drilling at 1,690 feet. L. Sikes' No. 1 Kirk, NW cor. SE, Section 16-1s-8w, a wildcat was drilling at 2,800 feet, with nothing showing. W. O. Smythe and others' No. 1 House, SE cor. SW NW, Section 29-2-8w, a wildcat in Stephens County, was drilling at 3,220 feet.

Simms Oil Co. and others' No. 1 Cobsa, SW cor. NW, Section 24-6-11w, Caddo County wildcat, is being abandoned at a total depth of 4,250 feet in shale. It failed to find sand and nothing was showing at the abandoned depth.

Pool Near Sacred Heart

Another pool may be developed in the Greater Seminole area near Sacred Heart in southeastern Pottawatomie County. The discovery well is Phillips Petroleum Co., Hicks Drilling Co. and others' No. 1 Crouch, NW cor. SW, Section 5-6-5. The well is showing for a good producer, estimated at 1,200 bbls. a day. It is located a considerable distance from any other production and will open a new area. Short term leases in the vicinity may force the starting of many new tests at a time when all operators are curtailing the drilling of new wells. The oil was found in the Simpson sand at 4,274 feet, and the well flowed at the rate of 50 bbls. an hour for 4½ hours. The Viola lime was found at 4,089 feet, and the 6-inch casing was landed at 4,140 feet. The Simpson was found at 4,149-4,225 feet. A showing of water was found at 4,256-66 feet and drilling deeper into the Simpson sand and oil showings were found. The oil flowed into pits before tankage was erected. The new well is located about 2 miles south of the St. Louis Pool, which is in Township 7-5. The offset acreage is owned by Gypsy Oil Co. which has the north acreage, Shell Petroleum Corp. has the northwest acreage, a diagonal offset, Deep Rock Oil & Refining Co. has the west offset, and the Magnolia Petroleum Co. has the south offset.

A production test was made of the new well in the Sacred Heart area in Section 5-6-5. The well was opened 13 hours and made three flows totaling 135 bbls., cutting 5 per cent.

This important discovery will be conservatively handled owing to the overproduction of crude oil and unwillingness of the pipe line companies to make new connections at the present time.

New Pool in Township 8-8

The new area just south of Wewoka, in the eastern part of Seminole County, which the Deep Rock Oil & Refining Co. found productive and drilled the discovery well, in Section 30-8-8, continues active. Several tests are expected to be completed in the area during the next week. The Deep Rock Oil & Refining Co. has two tests nearing the pay horizon and the Mid-Kansas Oil & Gas Co. has one. Deep Rock Oil & Refining Co.'s No. 2 Douglass, NE cor. SW, Section 30-8-8, was landing 6-inch casing at 3,795 feet. The total depth is 3,814 feet. Same company's No. 2 Smith, SW cor. NW NE, Section 30-8-8, was landing 6-inch casing at 3,814 feet. Mid-Kansas Oil & Gas Co.'s No. 2 Davis, NE cor. SE NW, Section 30-8-8, was drilling at 3,700 feet.

Western Operations

Operations in the Noble County gas area were increased during the week with the announcement of a new location by the Empire Oil & Refining Co. The test is No. 1 Freyler, SW cor. NE Section 4-20-1w. The test is a northeast offset to the recently completed gas well by the Twin State Oil Co. which made 14,000,000 feet of gas from sand at a total depth of 3,400 feet.

Magnolia Petroleum Co.'s No. 2 Weeder, NE cor. NW NW Section 22-21-2w, a wildcat, found a hole full of water at a total depth of 5,290 feet and may be abandoned.

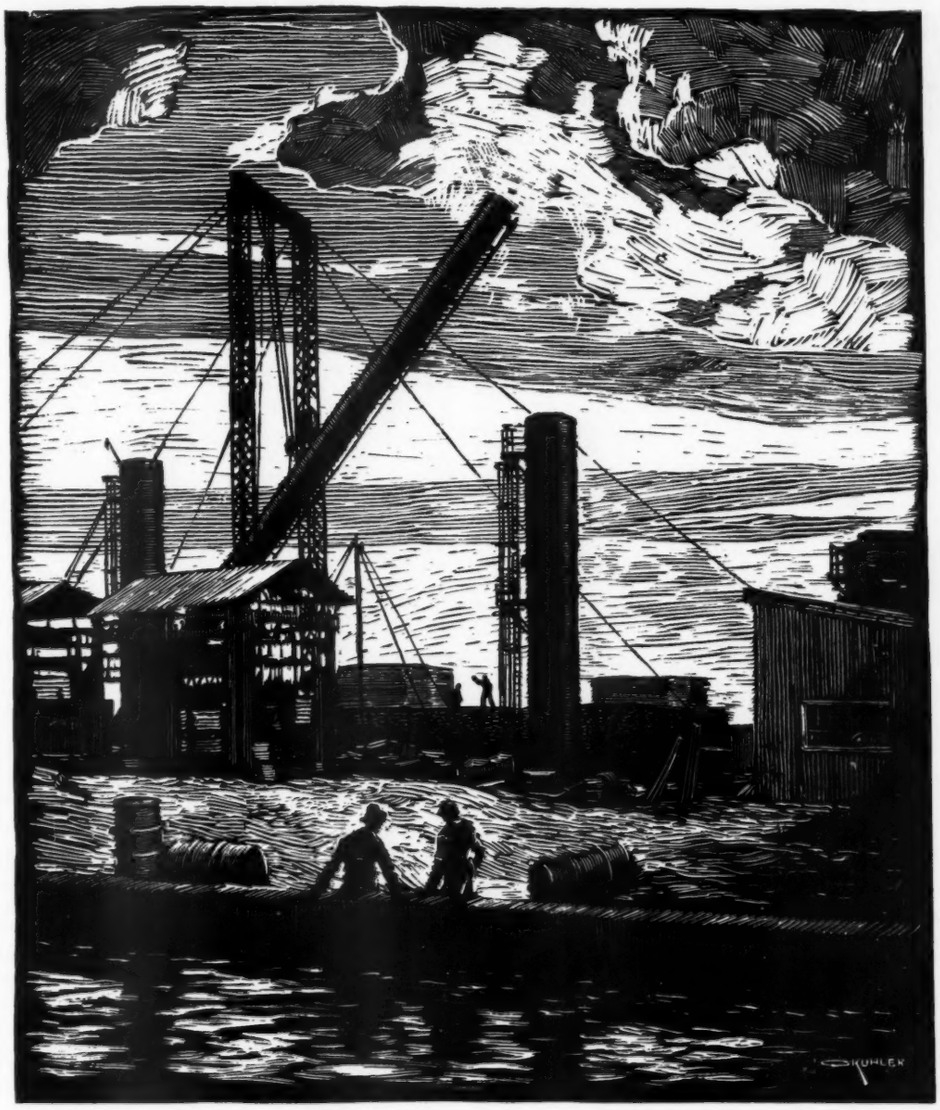
The new locations in the area are still shut down. Washoma Petroleum Co. and others' No. 1, NE cor. Section 22-22-1, Prairie Oil & Gas Co. and others' No. 1, SE cor. Section 21-22-1, are still standing as locations, but it is believed they will be drilled following the completion of the Prairie Oil & Gas Co. and others' No. 1 M. Upperman, SW cor. Section 22-22-1, which was drilling at 2,100 feet.

The wildcat test, Tom Slick Oil Co. and Ramsey Petroleum Corp.'s No. 1 Jones, SE cor. NW Section 24-17-2w, Logan County, cored the Wilcox sand at 5,709-18 feet, with a small showing of oil in the core. A dry sand was cored from 5,718-26 feet and the company was preparing to core the test deeper.

Another major oil company has entered Oklahoma as a prospective producer with the announcement of a new location in the Seminole area. Standard Oil Co. of California has staked a location for No. 1, NE cor. SW Section 1-7-7, southwest of the new development near Wewoka, in Seminole County. It is the only operation the company has in Oklahoma, although it has several thousand acres of leases in Oklahoma and Kansas. It is operating through its subsidiary, the California Co.

New Wells in Oklahoma City

During the week ending November 22 six wells were completed in the Oklahoma City Field, making a total of 653 completed wells out of a grand total of 809 operations. In addition to the 653 oil wells, the field has 24 gas wells, 36 rigs and locations, 27 wells drilling less than 5,000 feet, 18 between 5,000 feet and 6,000 feet, 21 drilling below 6,000 feet, 15 waiting for cement, and 15 shut down. The new completed wells were as follows: Phillips Petroleum Co.'s No. 1 Gustin, SW cor. NE Section 1-11-3w, swabbed 3 bbls. an hour from sand at a total depth of 6,561 feet; same company's No. 1 Unruh, NE cor. SW NW Section 2-11-3w, shut in after being allowed to clean itself for 15 minutes, in the course of which the gas was estimated at 40,000,000 feet a day at a total depth of 6,312 feet in sand. Wirt Franklin Petroleum Corp.'s No. 3 Page, SE cor. SW SE Section 35-12-3w, flowed 979 bbls. in three and one-half hours from sand at



RAISING THE STACK FOR A PIPE STILL which is one of two 2500 bbl. units built by Kellogg in Patagonia for handling Comodoro Rivadavia crude. Accurate laboratory analyses of crudes form the practical basis of Kellogg designs.

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6,220-6,496 feet. Indian Territory Illuminating Oil Co.'s No. 6 H. G. Trosper, SE cor. SW NE Section 14-11-3w, flowed 646 bbls. in 12 hours from sand at 6,235-6,489 feet. Same company's No. 1 A. B. Fox, SW cor. NW SW Section 14-11-3w, was immediately shut in after being completed from a total depth of 6,622 feet. It was estimated to be a 5,000-bbl. well. Kedberg Oil Co.'s No. 1 Burris, NW cor. SW SW Section 2-11-3w, made 260 bbls. in 17 minutes and started cutting the connections and was shut in. The total depth of well is 6,522 feet.

Greater Seminole Production

The production from the Greater Seminole area for the week ending November 17, was as follows:

Company—	Wells	Bbls.
Little River	372	23,934
East Little River	83	10,288
Carr City	72	12,546
Maud	134	3,206
Mission	92	7,393
Bowlegs	279	14,009
Earlsboro	281	20,909
South Earlsboro	27	1,842
East Earlsboro	160	18,170
Seminole	255	13,747
East Seminole	33	2,087
Searight	85	6,781
Allen	272	13,174
Asher	26	793
Wanette	47	13,043
Konawa	105	14,642
Sasakwa	51	5,021
St. Louis	483	23,295
Total	2,855	211,880

Greater Seminole Shipments

The pipe line shipments from the Greater Seminole area totaled 192,412 bbls. daily for the week ending November 17. The daily averages from the various pools were as follows:

Company—	Seminole (bbls.)	Asher, Pearson, St. Louis (bbls.)	Konawa (bbls.)
Barnsdall	2,233	....	....
Champlin	3,637	....	981
Consolidated	....	3,474	....
Cosden	6,301	....	2,298
Deep Rock	2,207	2,151	....
Empire	3,672	....	....
Gulf	22,497	5,335	766
Magnolia	7,496	5,812	....
Oklahoma	20,520	140	215
Prairie	11,745	4,165	3,575
Prod. & Ref.	1,480	....	....
Pure	4,263	....	....
Shell	5,031	260	773
Stanolind	25,452	6,154	3,235
Texas	8,302	4,197	3,556
Tidal	8,950	4,134	....
White Oak	1,436	....	....
Total	135,222	36,022	15,390
Tank cars	2,697	3,080	
Grand total	137,919	39,103	

Oklahoma City Oil Shipments

The total shipments from the Oklahoma City Field for the week ending November 17 were 721,777 bbls. The daily average shipments by companies were as follows:

Company—	Dly. av.
Empire	32,290
I. T. I. O.	1,164
Magnolia	12,226
Oklahoma	16,537
Prairie	13,987
Stanolind	21,780
Shell	1,525
Tidal	1,182
Gulf States	2,241
Anderson & Prichard	179
Total	103,111

Oklahoma City Production

The following wells were on production during the seven days ending November 17, in the Oklahoma City Pool, under the proration orders. All other wells were shut in and will be opened and produced according to the curtailment plan.

	S.T.R.	Wells	Bbls.
Anderson-Prichard:			
Gibbons	1-11-3w	4	12
Moore	2-11-3	1	148
Pest House	1-11-3	2	437
Roosevelt Place	2-11-3	5	313
Blackstock et al:			
Harvey	15-11-3	1	388
Blackwell:			
Clemer	10-11-3	1	205
Scruggs	35-12-3	1	15
Coline:			
Clour	25-11-2	16	999
Olds	24-11-2	10	1,319
Warren	18-11-2	8	782
Continental:			
Sudik	6-10-2	4	114
Crom-Franklin:			
T. Park	13-11-3	30	4,309
Denver P. & R.:			
Harvey	15-11-3	1	576
Whitten	14-11-3	1	209
Hall-Briscoe:			
Holmes	10-11-3	4	3,843
Lindsey	14-11-3	3	1,522
Muller	2-11-3	1	766
Heeman-Coe:			
Cunningham	1-11-3	2	708
I. T. I. O.:			
Banta	18-11-2	1	13
Barker, Drake	14-11-3	1	389
Billen	26-11-3	1	331
Bod. Anderson	30-11-2	3	38
Bodine, A.	24-11-3	6	111
Brokaw, A	13-11-3	4	44
Butterfield	11-11-3	1	180
Button	19-11-2	5	191
Canfield, L.	13-11-2	2	16
Carrico	14-11-3	5	576
Corff	11-11-3	5	323
Eacock	11-11-3	2	369
Emmerson, N.	30-11-2	11	205
Farley, E.	24-11-3	1	1
Farley, L.	19-11-2	4	1
Farley, Fuzzell	19-11-2	2	98
Ferndale, Comm	11-11-3	4	1,786
Fortson, Farley	24-11-3	3	5
Habegger	14-11-3	2	598
Handl	11-11-3	1	141
Holmes-Gray	14-11-3	1	7
Huffman	14-11-3	2	247
Johnson	25-11-3	9	368
Jones, H. W.	1-11-3	4	1,855
Jones	31-11-2	14	2,194
Jones, Comm.	1-11-3	4	4,384
Knox, May	14-11-3	4	976
K. Henning	24-11-3	3	5
Lawrence Place	15-11-3	2	1,489
Lemmon	11-11-3	2	163
Magnolia Hgts.	14-11-3	1	71
Mt. Vernon Hgts.	15-11-3	1	113
Okla. State L.	36-11-3	8	909
Pasadena Hgts.	14-11-3	4	29
Peterson, Sad	25-11-3	8	519
Phillips	1-11-3	1	2,838
Rensimer	14-11-3	1	105
Salasman	32-11-2	5	14
Sudik	31-11-2	11	4,733
Theimer, E.	12-11-3	8	1,145
Thom. Fuzzell	13-11-3	3	9
Trosper	13-11-3	10	132
Trosper, Clar.	14-11-3	4	751
Trosper, C. E.	11-11-3	1	456
Trosper, E.	14-11-3	2	369
Trosper, H. G.	14-11-3	5	1,719
Trosper, B. L.	12-11-3	2	774
Trosper, Hughes	11-11-3	1	205
Unsell-Krager	23-11-3	3	14
Waters	23-11-3	6	326
I. T. I. O. et al:			
Boulevard, Add.	14-11-3	1	105
Mabee:			
Schilling	10-11-3	1	988
Mid-Kansas:			
Browning	18-11-2	2	10
Fortson	24-11-3	5	49
Mollman	23-11-3	4	642
Tros-Browning	18-11-2	1	4
Trosper, D. B.	19-12-1	1	174
Morgan:			
Stout	2-11-3	1	1,143
Oils, Inc.:			
Moreland	2-11-3	1	1,214
Ross	2-11-3	1	1,119
Phillips:			
Harrell	2-11-3	1	9
Roden	2-11-3	1	370
Prairie-Slick:			
Hiddleston	19-11-2	7	81
Sigman	32-11-2	7	206
Reynolds, W. R.:			
Hastings	1-11-3	1	587
Shaffer, J. C.:			
Childs	14-11-3	1	243
Shaffer et al:			
Vinita Park	2-11-3	2	485
Shell:			
Potty	30-11-2	7	589
Sinclair:			
S. Land No. 54	36-11-3	16	522
Stamper	30-11-2	6	12
Vencl	31-11-2	16	1,620
Sinclair-Amerada:			
Kinter	30-11-2	10	26
Sinclair:			
S. Land No. 69	36-11-3	3	661
Skelly et al:			
Ainsworth	10-11-3	4	936
Hoopes	31-11-2	8	835
Tanner	10-11-3	2	66
Slick, T. B.:			
Classen	2-11-3	3	516
Clegg	2-11-3	1	5
Frost, C. G.	10-11-3	1	177
Glidden	13-11-3	2	7
Harrison	10-11-3	1	136
Moore	2-11-3	1	125
Thornton	15-11-3	1	374
Slick et al:			
Alexander	2-11-3	2	1,994
Baker	1-11-3	5	3,974
Crawford	1-11-3	1	1,033
Danreuther	2-11-3	3	217
Dunivan	1-11-3	1	252
Houghton	1-11-3	1	442
Milner	1-11-3	2	1,795
Storie	2-11-3	1	1,450
Townsend	1-11-3	2	181
Zerkerle	13-11-3	1	63
Carter	1-11-3	1	2,447
Hoops	31-11-2	8	781
Slick-I. T. I. O.:			
Dennis	11-11-3	1	205
Huddleston	14-11-3	1	124
Wirt Franklin:			
Eacock	11-11-3	1	2,011
Holder	2-11-3	2	39
Lowery	12-11-3	10	161
Page	35-12-3	5	139
Theimer	2-11-3	12	6,603
Theimer-Butt	11-11-3	1	45
Wright	2-11-3	3	166
Total		643	86,903
Last week		638	71,304

New wells, 5. Increase, 15,599 bbls. Average per well per pool, 135 bbls.

Carter County

Chickashaw Gas Corp. is erecting the rig for No. 1 Joe Carter, SE cor. NW NW, Section 13-1s-3w. Carter Oil Co. has the rig up for No. 1 Hopson, NE cor., Section 25-1s-3w, Tatums Pool. Max Westheimer made location for No. 1 Cox, NE cor. NW, Section 25-1s-3w. Magnolia Petroleum Co. moved a machine in for No. 1 E. S. Pool, SE cor. NE NE SE, Section 29-1s-2w. No. 2 M. Deckerson, SW cor. SE NE, Section 24-1s-3w, has been completed for 2,468 bbls. in sand 1,935-2,100 feet and broken sand 2,100-12 feet.

Caddo County

Simms Petroleum Co.'s No. 1 Cobza, SW cor. NW, Section 24-6-11w, has been abandoned at 4,256 feet.

Comanche County

K-D Drilling Co.'s No. 1 Corry, NE cor. SE SE, Section 23-2-10w, has been abandoned at 1,350 feet. No. 1 Cox, NE cor. NW, Section 24-2-10w, is dry and abandoned at 1,310 feet.

Creek County

The Producers & Refiners Corp. made location for No. 1 Miller, NW cor. NE NW, Section 30-17-8. J. B. Grieves' No. 8 Lowe, SW cor. SE NE NE, Section 13-19-8, is drilling at 1,000 feet. O. M. Irelan and others' No. 3 Smith, CSL SW SE, Section 11-17-10, is rigging up. Tidal Oil Co.'s No. 2 Pigeon, NE cor. SE SE NE, Section 36-19-7, has been completed for 100 bbls. in sand 2,500-28 feet. Gled Oil Co.'s No. 2 Bruner, NW cor. SW NW, Section 31-19-8, is dry and abandoned at 2,788 feet. Tim Cushing and others' No. 1 P. Self, NW cor. SE NW, Section 12-17-8, made 5 bbls. in sand 3,010-50 feet. J. H. Wright estate's No. 1-A Cartright, CEL SW, Section 19-17-11, has been completed for 1,500,000 feet of gas in sand 2,400-34 feet. F. B. Murta and others' No. 2 Stewart, NE cor. SW NW, Section 32-17-12, swabbed 40 bbls. from sand 2,398-2,405 feet. Turners Brothers and Savoy Oil Co.'s No. 1-A Barnett, NE cor. SE NW, Section 9-16-12, has been completed for 1,000,000 feet of gas in Taneha sand 1,788-98 feet after plugging back from 1,983 feet.

Cleveland County

Indian Territory Illuminating Oil Co. and others' No. 2 Reynolds, SE cor. NE NW, Section 6-10-2w, Oklahoma City Pool, has been abandoned at 6,777 feet.

Hughes County

Empire Oil & Refining Co. and others' No. 1 Scroggins, SW cor. SE SE, Section 20-7-8, is a cellar. Jarvis & Holm and others made location for No. 1 Street, SW cor. NW NW, Section 16-7-8. W. E. McCraw's No. 1 King, C SW NE. Section 11-1-8, is dry and abandoned at 3,045 feet.

Kiowa County

Christian and others' No. 1 James, NE cor. SE, Section 8-7-18w, is drilling at 10 feet. O. B. Riley's No. 1 Grebb, SW cor. NE, Section 6-7-16w, has been abandoned at 1,472 feet.

Muskogee County

J. M. Foltz' No. 1-A Woodall, SE cor. SW NW, Section 20-15-16, is rigging up to deepen from 1,200 feet. R. Kenworthy and others' No. 1-A Dodson, NE cor. SW SE, Section 6-14-19, is drilling at 100 feet. O. A. Sewell and others' No. 1 Stidham, SE cor. SW NW, Section 4-14-17, is dry and abandoned at 1,751 feet. Moore & Crow's No. 1 Hood, C SE SW, Section 31-12-19, has been abandoned at 703 feet.

Okmulgee County

Mack Drilling Co.'s No. 1 L. Peters, SE cor. SW, Section 34-16-14, is spudding. Whitcomb and others' No. 3 Harris, SW cor. NE NE, Section 1-14-14, is spudding. E. J. Lambert's No. 1-A Atkins, SW cor. NW SE, Section 17-13-15, is drilling at 1,005 feet. C. Ramstead's No. 1 Hoffman, NE cor., Section 29-12-14, is spudding. Speary Brothers' No. 1 Simmons, NW cor. NE NW NW, Section 29-15-12, has been completed for 1,000,000 feet of gas in sand 1,058-65 feet. A. W. Cline's No. 2-A Harrison, C SE NW, Section 19-15-14, made 3,000,000 feet of gas from sands 1,684-90 feet and 1,700-04 feet. Whitcomb and others' No. 2 Harris, SW cor. NE NE, Section 1-14-14, has been completed for 1,000,000 feet of gas in sand 627-44 feet.

Oklahoma County

Scott & Co. has the rig up for No. 1 Unknown, CWL NW NE SW, Section 35-12-3w, Oklahoma City Field. Marco Oil & Royalty Co. has the rig up for No. 1 Refinery, CNL SE NE SE, Section 4-11-3w. Mabee Production Co. and Tidal Oil Co. made location for No. 1 Reynolds, SW cor. SE NE NW, Section 10-11-3w. Anderson & Prichard and Phillips Petroleum Co. staked location for No. 1 Sandnes Community, SE cor. NE SE NW, Section 10-11-3w. Wirt Franklin Petroleum Corp.'s No. 3 Page, SE cor. SW SE, Section 35-12-3w, has been completed for 2,347 bbls. in eight hours from sand 6,220-6,496 feet. Oils, Inc.'s No. 1 Moreland, NE cor. SW NW NE, Section 2-11-3w, has been completed for 9,633 bbls. in sand 6,205-6,457 feet. No. 1 Ross, SE cor. NW NW, Section 2-11-3w, flowed 51,944 bbls. in 16 hours from sand 6,261-6,550 feet. Hall & Briscoe's No. 5 Holmes, SW cor. NW SE, Section 10-11-3w, has been completed for 54,156 bbls. in 16¾ hours from sand 6,420-6,540 feet. J. E. Mabee and others' No. 1 Schilling, SE cor. NE SW, Section 10-11-3w, has been completed for 13,120 bbls. in 16 hours in sand 6,517-6,620 feet. Skelly Oil Co. and Heenan & Coe's No. 2 Tanner, NE cor. SE NE, Section 10-11-3w, made 27,662 bbls. in 17 hours from sand 6,268-6,594 feet. Indian Territory Illuminating Oil Co. and others' No. 2 Clarence Trosper, NW cor. NE, Section 14-11-3w, made 3,666 bbls. from sand 6,450-98 feet. No. 3 Lawrence Place, CWL E half W half NE, Section 15-11-3w, produced 5,877 bbls. in eight hours from sand 6,362-6,466 feet. Coline Oil Co.'s No. 14 Clauer, NW cor. NE SE, Section 25-11-3w, has been completed for 427 bbls. in sand 6,270-6,456 feet. Indian Territory Illuminating Oil Co.'s No. 6 Oklahoma State, SW cor. NE NW, Section 36-11-3w, made 1,027 bbls. in eight hours from sand 6,505-6,692 feet.

Osage County

Continental Oil Co. and the Prairie Oil & Gas Co.'s No. 6, CEL W half NE SE, Section 5-23-9, has been completed for 75 bbls. in 12 hours in chat 2,111-39 feet. Devonian Oil Co.'s No. 1, NE cor. NW NE, Section 33-22-11, is dry and abandoned at 1,706 feet. Turman Oil Co.'s No. 4, SE cor. SW SW, Section 11-21-8, made 175 bbls. from Red Fork sand 2,292-2,319 feet.

Pawnee County

Dewey Neal and others' No. 2 Diem, SW cor. NE NW, Section 18-21-8, is drilling at 1,972 feet. Flynn & Morgan's No. 1 Freeman, NW cor., Section 1-20-5, is dry and abandoned at 3,678 feet.

Payne County

Carter Oil Co.'s No. 6 Crow, SW cor. SE NE, Section 14-19-5, has been abandoned at 3,553 feet. Pure Oil Co.'s No 2 Kennedy, SE cor. NE NW, Section 9-18-5, has been completed for 5,500,000 feet of gas in sand 2,648-65 feet.

Pittsburg County

Central States Light & Power Co.'s No. 2 Carney, SW cor. NE, Sectioon 9-7-18, has been completed for 14,000,000 feet of gas in sand 1,755-1,855 feet.

Pottawatomie County

Lippa Drilling Co.'s No. 1 Roush, NW cor. NE SW, Section 20-9-5, Earlsboro Field, has been completed for 50 bbls. at 4,225 feet after plugging back from 4,463 feet in Wilcox sand. Pure Oil Co.'s No. 2 Case, SE cor. SW, Section 14-6-3, West Asher Pool, flowed 1,871 bbls. from sand 3,621-40 feet. Payne and others' No. 1-A Bullock, SE cor. NE, Section 22-6-3, has been completed in sands 3,485-94 feet and 3,500-37 feet making 1,920 bbls. Empire Oil & Refining Co.'s No. 2 Alexander, NW cor. SW SE, Section 23-6-3, swabbed 123 bbls. from sand 3,431-36 feet, total depth 3,441 feet. Indian Territory Illuminating Oil Co.'s No. 7 Davidson, SW cor. SE NW, Section 23-6-3, made 458 bbls. from sand 3,464-92 feet, total depth 3,493 feet. Twin State Oil Co.'s No. 1 Sowers, SW cor. NW SE, Section 23-6-3, has been completed for 160 bbls. from sand 3,429-43 feet after plugging back from 4,050 feet in Simpson sand. No. 2 Sowers, NE cor. NW SE, Section 23-6-3, swabbed 55 bbls. from sand 3,395-3,439 feet after plugging back from 3,455 feet.

Seminole County

Ligon, Todd and others' No. 1 Wilson,

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NW cor. NE, Section 30-8-8, Wewoka Townsite Pool, is setting surface pipe. Jarvis & Holm made location for No. 1 Fish, NE cor. NW NE, Section 30-7-8. Gypsy Oil Co. has the rig up for No. 1 Charty, NE cor. SE SW, Section 29-6-6, Konawa Pool. The Prairie Oil & Gas Co.'s No. 1 Abel, C SW NE, Section 10-9-8, has been abandoned at 4,415 feet. Empire Oil & Refining Co.'s No. 2 Brown, NE cor. SE, Section 3-8-5, Carr City Pool, has been completed for 2,444 bbls. in 23 hours from sand 4,120-46 feet. Amerada Petroleum Corp.'s No. 2 Tiger, SW cor. SE NW, Section 3-8-5, flowed 2,995 bbls. from Hunton lime 3,900-45 feet, total depth 4,040 feet. Deep Rock Oil Corp.'s No. 1 Douglas 60 acres, NE cor. SW, Section 30-8-8, Wewoka Townsite Pool, is dry and abandoned at 1,484 feet. Empire Oil & Refining Co.'s No. 2-A Chilly Fish, SW cor. SE NE, Section 19-7-8, flowed 889 bbls. from sandy Wapanucka 3,092-3,107 feet. Sinclair Oil & Gas Co.'s No. 2 M. Caesar, SW cor. NW SE, Section 29-6-6, Konawa Pool, flowed 710 bbls. from Cromwell sand 2,681-86 feet, total depth 2,687 feet.

Stephens County

Pace and others' No. 1 Toney, SW cor. SE NW, Section 27-2s-7w, is a rig. Harry Hanbury's No. 1 Palmer, SE cor NW NE, Section 31-1s-8w, has been abandoned at 2,805 feet. Pace and others' No. 1-B Green, NW cor. SE NE, Section 2-2s-8w, has been abandoned at 2,215 feet.

Tulsa County

Gallo Brothers' No. 1 McIntosh, SE cor. NW, Section 1-19-14, is dry and abandoned at 1,233 feet. Byrne & Green's No. 2 Boulton, SW cor. SE NE, Section 28-18-14, is dry and abandoned at 1,402 feet.

Wagoner County

Western D. & E. Co.'s No. 7 A. Barnett, NW cor. SW NE, Section 34-18-17, is drilling at 160 feet. F. G. Helscel's No. 1 Apueka, SE cor. SW NW, Section 6-17-15, is spudding. A. H. Secrist's No. 3 Barnett, NE cor. NW SE NW, Section 34-17-16, is drilling at 630 feet. May Drilling Co.'s No. 1 Kelly, NW cor. SW, Section 10-18-16, has been abandoned at 1,143 feet. R. L. North's No. 1 Austin, SE cor. NW SE, Section 31-18-17, has been completed for 4,250,000 feet of gas in sand 900-40 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 56)

Twin Mounds district, is drilling at 1,077 feet. It was shot at 1,067-74 feet to straighten a crooked hole. R. D. Compton's No. 1 Vandergriff, NW cor. NE, Section 33-19-30, Twin Hills district, set and mudded 8¼-inch at 1,425 feet and is resuming.

San Juan County

Continental Oil Co.'s No. 24, SW cor. NW, Section 1-29-19, Rattlesnake Dome, is drilling at 3,850 feet. It has been delayed somewhat for two weeks by cavy ground which caused so much trouble in the offset discovery well drilled several years ago. Kutz Canon Oil & Gas Co.'s No 1. Day, SW cor., Section 20-28-10, Kutz Canon district, which topped Picture Cliff at 2,012 feet with a good show of gas several weeks ago, is rerunning 6¼-inch to cement before drilling in. Murchison Oil Co.'s No. 4 Angel Peak NW SW SE, Section 11-28-11, drilled out plug after cementing 6⅝-inch at 1,786 feet on top of Picture Cliff, but had to shut down on account of boiler trouble before drilling into the sand. Same company's No. 5 Angel Peak, NE NW, Section 11-28-11, is drilling below 40 feet.

San Miguel County

Hirshfield Development Co.'s No. 1 Cabra Springs, NE, Section 21-12n-22, is drilling at 1,455 feet, and Cibola Petroleum Co.'s No. 1 Crow, SW NW SE, Section 19-13-14, is drilling at 735 feet after setting 12½-inch at 550 feet to make a water shutoff.

Luna County

Angelus Oil & Mining Co.'s No. 3 State, C NW SE, Section 20-21s-10w, near Deming, is drilling at 5,912 feet.

Acme Development Co.'s No. 1 Santa Fe, SW NW, Section 27-7n-4w, is reported drilling at 4,700 feet.

UTAH

Reports from Vernal, Utah, where Uintah Gas Co. has its headquarters, state that Standard Oil Co. of California will explore the deep horizons on the Ashley Creek structure in Uintah County next spring, leases having been obtained from Uintah Gas Co. which at present is supplying Vernal with natural gas from two wells on that structure. Standard Oil Co. of California operates in the Rocky Mountain area through the California Co., a subsidiary which is not doing any drilling in this territory at present outside of Hobbs Pool in New Mexico. The local headquarters have no confirmation of the Utah report, but from other sources it is learned that the parent company has been doing considerable geological work in this territory recently and most likely will again become active in drilling several wildcats. The Ashley Valley structure was drilled by the Midwest Refining Co. for the Utah Oil Refining Co. and several wells were put down. Two of these are making gas from comparatively shallow horizons. The operation was turned over to the Uintah Gas Co., in which Paul Stock and Ray Phoebus are interested, and that company obtained franchise privileges from Vernal and laid a pipe line to supply that town with natural gas. The deepest well drilled at Ashley Creek was Midwest's No. 3 on SW NW, Section 23-5-22, in 1927. It went to 2,720 feet and plugged back and was completed as a 5,000,000-foot gas well. The Pennsylvanian horizons were not tested. The gas in No. 3 well comes from the Morrison formation at 1,655-83 feet. A deep test probably would explore all horizons down to 5,000 feet.

Cisco Springs Syndicate's No. 1 Moss, SE cor. SW, Section 9-20-23, Cisco Springs district in Grand County, was abandoned at 2,030 feet. It had a show of gas in top of the Dakota, the formation which had been penetrated when drilling was suspended. Utah Southern Oil Co.'s No. 1 Balsey, NE NE, Section 31-23-21, which is to be a test of the Salt Valley structure, is building camp. Oklahoma interests are reported to have spudded in a well northwest of Salt Lake City, between Jordan River and Great Salt Lake. An 80-foot derrick has been erected and it is planned to go 4,000 feet or more. Utah-Pennsylvania Oil Co.'s No. 1, NW NW, Section 3-10n-4w, Penrose, or Little Mountain district in Box Elder County, is drilling below 3,635 feet.

COLORADO

Weld County

Platte Valley Petroleum Co.'s No. 1 Patterson, NE SE NW, Section 24-6n-61, on the Greasewood Dome in Weld County, which came in October 10 at a depth of 6,667 feet making five to six heads a day from the shale supposedly above the Muddy sand, shows no important change. Three thousand barrels of crude have been shipped from the well to the Continental Oil Co.'s refinery at Denver up to this time. The well continues to make flows by heads, though the tools have not been run for more than a month, and the production stands at around 120 to 130 bbls. a day. While the company has placed orders for all the heavy equipment necessary to drill the well into the sand under control and complete it and this has been shipped, no date has been set for the work to begin. There is a well-founded impression that the well may not be drilled in for some time pending the straightening out of the lease situation. While the lease play in that area is just as active as ever, most of the leases are taken on a bonus and rental basis without drilling clauses and no wells have been spotted up to this time. However, the opinion is generally held by the oil men that the discovery portends the opening of an important field and drilling will come in the due course of time. The possibility of the discovery well being on the edge of the dome is fully recognized, but should this prove to be true, it in no way diminishes the importance of the strike.

Morgan County

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, Fort Morgan anticline, a continuation of the general line of folding upon which the Greasewood well is located, is reported by the company to have been drilling at 3,630 feet on November 15.

Larimer County

Continental Oil Co.'s No. 3 Scott, SW SE, Section 6-9n-68, Wellington Dome, an old well in the Muddy sand which is being deepened to test lower horizons, is to be carried on down to the Morrison and possibly the Sundance after finding water in the Dakota and Lakota. It is bottomed at 4,637 feet and is running a string of 4¾-inch casing. Stanley M. Barrows' No. 1 Monroe, NW NE, Section 26-11n-69, Round Butte, is shut down at 1,050 feet temporarily due to heavy snow storm. C. Leonard Smith's No. 1 State, SE cor., Section 36-12n-70, Sand Creek, is bottomed at 310 feet to which depth 10-inch was run to shut off water. The Standard Oil Co. of Colorado's No. 1 Hertha, NW cor., Section 21-4n-69, Berthoud Dome, which was temporarily completed last year at 2,820 feet as a 1,500,000-foot gas well in the Nio-Benton sand, is drilling at 2,850 feet with the Muddy, the original objective, as the next important horizon to be cut.

Fremont County

Wallace Oil & Mining Co.'s No. 6, SW cor., Section 15-20-69, in the south extension of the Florence Pool, was abandoned at a total depth of 2,500 feet. It had some oil but not in commercial quantities, and a show of gas at 1,500 feet. Same company's No. 7, about 50 feet east of No. 6, was temporarily completed at 1,740 feet and pumped 40 bbls. the first 24 hours. Later it will be deepened to 2,200 feet. Continental Oil Co.'s No. 1 Gibbons-Truesdale, NW NW, Section 20-20-69, is drilling at 2,405 feet.

Park County

South Park Oil Co.'s No. 1 Milligan, NE cor. SE, Section 13-8s-76, Jefferson district, is bottomed at 1,580 feet and running 8¼-inch to bottom. This well was idle for several weeks waiting for casing. The company reports that upon resuming, the tools were run to test the hole and came up coated with oil. The bailer then was run and found about 200 feet of oil standing on top of 1,500 feet of water. Two bailersfull were recovered and most of the remainder was lost while running casing. William T. O'Bryan, geologist for the company, says the oil was very high grade, probably 68 to 72° gravity and was accompanied with enough gas to burn several feet above the casing. The showing is supposed to have been in the Frontier. None of the scouts have visited the well as far as known since the showing was reported.

Archuleta County

Standard Oil Co. of Colorado's No. 1 Crowley, NE cor., Section 2-32n-2e, Price structure, is temporarily completed at 405 feet after setting 8¼-inch pipe. It is estimated at 300,000 to 400,000 feet of gas from sand at 235-47 feet. The rig has been moved over to drill No. 1 Brooks, the correct location, if surveyed, being NW cor. NE, Section 2-32-2e, half a mile west of No. 1 Cowley. Same company's No. 1 Wirt, SW SE NW, Section 34-33n-1e, Chromo Dome, is drilling below 50 feet, and its No. 1 Fitzhugh, NW SE SW, Section 34-33-1, is shut down at 502 feet.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Denver, is bottomed at 3,784 feet and is underreaming 6⅝-inch.

Baca County

A. R. Jones Oil & Operating Co.'s No. 1 Boice Cattle, NW NE, Section 22-34-42 (Tract 50), is drilling below 4,100 feet in a dry hole. Water at 3,745-3,815 feet has been shut off.

Moffat County

Texas Production Co.'s No. 12 Knowlton, SW SE, Section 33-5n-91, Moffat Dome, was completed at a total depth of 4,592 feet and made 109 bbls. first 24 hours from the Sundance. A little water at the bottom was plugged off. The well is a little lower on the structure than No. 11 Knowlton, the nearest producer. Same company's No. 4 Wick, NW NW, Section 10-4n-91, completed as a producer in the Dakota in 1925, and being deepened to the Sundance, is bottomed at 4,646 feet and will be finished with cable tools. Mountain Fuel Supply Co.'s No. 22 State, Tract 37-12n-100, Hiawatha Dome, is fishing for parted 15½-inch at a total depth of 815 feet.

Routt County

Texas Production Co.'s No. 4 Carstarphen, NE NW NW, Section 5-6n-86, Tow Creek, when put on the pump at a total depth of 3,278 feet, went off after an hour or two and the rods and tubing are being pulled. It will be swabbed to determine the cause of the trouble and may be drilled deeper.

WYOMING

The first big snowstorm of the season hindered drilling operations in Wyoming and came very near claiming a victim in Ty Cobb, well-known drilling contractor, who became lost in Sweetwater County. He has the contract for drilling the Vermillion Oil Co.'s well at Hiawatha and was overtaken on his way to that camp. His car was stalled and he attempted to walk to the Humphreys camp of the Mountain Fuel Supply Co., a distance of 5 miles. He was located at the camp in a semiconscious condition by a searching party and taken to the same company's Hiawatha camp, where he could receive better attention. Part of his body, including his feet, was frozen.

Sweetwater County

Most of the wells in this county are now shut down for the winter, including the operations of the Mountain Fuel Supply Co., with the exception of its No. 1 Cappers, SW NE Section 2-19-104, North Baxter Basin, which is drilling at 3,265 feet.

Fremont County

Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW Section 22-3n-1w, Pilot Butte Field, which was being plugged back to complete as a gas well, broke loose this week, blew out the concrete base in the cellar which was put in some months ago to anchor the pipe and fittings, and is blowing even stronger than when the sand was first entered. No gauge was taken, but the flow is estimated at 65,000,000 feet or better per day. This well was started in the fall of 1928 as a deep test of the Pilot Butte Field where there is some shallow production. About a year ago it blew in at 3,367 feet in the Muddy sand as a big gas well and killed one of the crew. After the well had been put under control, it gauged 63,000,000 feet and proved a new gas field. Subsequently it was deepened to 4,635 feet to test lower horizons for oil and plugging back was started. It was plugged back to 3,365 feet and when bailed the gas came in again. It was estimated at 15,000,000 feet. Then the valves were closed to take a gauge and the pressure built up to 800 pounds in 10 minutes. Then it broke loose and tore out the concrete base and is blowing wild. The well indicates it may be considerably larger than it appeared when the sand was first drilled. At that time the hole had not been cased down to the sand and it is supposed part of the pressure was dissipated into the overlying shales.

Producers & Refiners Corp.'s No. 10, NW cor. Section 14-32-95, Big Sand Draw, the first test on that structure to get through the heavy gas pressure in the Frontier sands, is coring in gray shale to 3,720 feet and reaming at 3,709 feet. It topped the Muddy, the first of the Dakota series, at 3,457 feet and encountered heavy gas pressure, but it is being drilled with rotary equipment, and no stop to test was made. Same company's No. 2, SE NW Section 33-34-92, Muskrat Dome, is bottomed at 4,758 feet and reaming at 4,757 feet. It is also a rotary test to horizons below the big gas in the Frontier in the discovery and is supposed to be below that horizon. Texas Production Co.'s No. 1 State, SW SW Section 36-34-95, Alkali Butte, which has been bottomed for several months at 4,485 feet, between the Dakota and Lakota, where it is delayed by casing trouble, is still at that depth with 304 feet of 6⅝-inch still in the hole.

Uinta County

Park City Oil Co.'s No. 1 Christensen, NE cor. Section 6-15-113, Lyman district, set 6¼-inch at 2,150 feet to shut off water. It has penetrated 14 water strata

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down to this depth. The first objective is expected at around 2,400 feet.

Lincoln County

Mountain Oil Corp.'s No. 1 State, NE cor. Section 36-25½-115, Wyoming structure, is shut down at 1,112 feet with 13⅜-inch on bottom to check titles before drilling into the Park City formation which was topped at 1,105 feet. Enough gas has been encountered in this test to supply the camp with light and fuel.

Sublet County

Circle Oil Co.'s No. 1 Elkhorn, NE SE Section 8-27-113, La Barge Field, encountered a 25-foot sand at 2,323 feet showing oil with considerable gas pressure, but no test has been reported. Same company's No. 2 Elkhorn, NE Section 17-27-113, is resuming at 1,600 feet.

Carbon County

California-Wyoming Oil Co.'s No. 1, Section 29-23-88, The Willows (Buck Springs) structure, 18 miles south and a little east of Little Lost Soldier, is reported to have a good show of oil at around 800 feet. Harold L. Nutting is manager. The Dakota is expected at

(Continued on Page 130)

GULF COAST FIELDS AND WILDCATS

(Continued from Page 48)

Sun Oil Co.'s No. 18 Bender ..... Drlg. shale and lime 3,900 ft.
Sun Oil Co.'s No. 49 River, north ..... Drlg. shale 5,748 ft.
The Texas Company's No. 2 fee ..... Total depth 4,397 ft.; sidetracking 4,120 ft.
Trapshooter Oil Co.'s No. 2 Rosenbaum ..... Shale 4,067 ft.; set 45 ft. screen 4,067 ft.; swabbed dry.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 2 Manchester Corp. ..... Rig.
Mike Kourl's No. 1 Jones fee, northwest ..... Total depth 3,840 ft.; sidetracked 3,672 ft.; set 22 ft. screen 3,672 ft.; tested salt water.
Rio Bravo Oil Co.'s No. 20-A Settegast ..... Total depth 5,550 ft.; sidetracked 4,824 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Production Co.'s No. 61 Davis ..... Rig standing.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 5 Lost Lake ..... Soft sand 5,488 ft.; fishing core barrel.
Pure Oil Co.'s No. 12 Lost Lake ..... Drlg. tough gumbo and lime 2,559 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Total depth 5,662 ft.; drlg. sandy lime 4,337 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 13-A Cotton ..... Rig.
Rio Bravo Oil Co.'s No. 100-A Cotton ..... To pump 539 ft.
Rio Bravo Oil Co.'s No. 102-A Cotton ..... Comp. flowing 98 bbls. 543 ft.

GOOSE CREEK—HARDIN COUNTY

Humble Oil & Ref. Co.'s No. 78 Simms-Smith ..... Trying to set 9⅝-in. casing 4,993 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 88 Gladys (workover) ..... Pulling screen.
Yount Lee Oil Co.'s No. 72 McFaddin ..... Drlg. sticky shale 4,988 ft.
Yount Lee Oil Co.'s No. 143 McFaddin ..... Drlg. hard shale 5,742 ft.
Yount Lee Oil Co.'s No. 144 McFaddin ..... Abandoned in heaving shale 5,421 ft.

NORTH DAYTON—LIBERTY COUNTY

Saxet Oil Co.'s No. 2 Davis ..... Sand and shale showing oil 5,105-75 ft.; cmtd. 6⅝-in. csg. 5,136 ft.
Harrison & Abercrombie's No. 1 Jones ..... Total depth 4,625 ft.; sidetracking.
Harrison Oil Co.'s No. 4 Quintette (workover) ..... Drlg. anhydrite 4,902 ft.; top of anhydrite 4,600 ft.
Harvey Smith's No. 1 Kynerd ..... Drlg. gumbo 2,665 ft.

HIGH ISLAND—GALVESTON COUNTY

Gulf Prod. Co.'s No. 10 Smith ..... Total depth 5,792 ft.; sidetracking shale 5,129 ft.
Marrs McLean's No. 19 Cade ..... Drlg. hard lime 3,304 ft.
Marrs McLean's No. 20 Cade ..... Rig.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 14 O'Brien ..... Cap rock 3,944-46 ft.; drlg. salt 4,061 ft.
Trinity Petroleum Co.'s No. 1 C. W. Pickett ..... Rigging up to pump 3,420 ft.

ORANGE—ORANGE COUNTY

Gulf Prod. Co.'s No. 12 Hagen-Moore ..... No report.
Orange Pet. Co.'s No. 13 Chesson ..... Swabbing 3,504 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 27 Moore ..... Spudded.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 2 Starks ..... Drill stem stuck 6,045 ft.; cmtd. back to 4,144 ft.; perforated csg. 4,114-44 ft.; bailing.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 4 Janner ..... Drlg. quartzite 3,102 ft.
Sun Oil Co.'s No. 1 Freeman ..... Drlg. sandy shale 1,899 ft.
Sun Oil Co.'s No. 3 Grote ..... Drlg. shale 1,198 ft.

SOUR LAKE—HARDIN COUNTY

The Texas Company's No. 307 fee ..... Pulling liner 2,797 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Oil Co.' No. 1 Kirby fee ..... Location.
Cranfill-Reynolds Oil Co.'s No. 1 Vajdak (workover) ..... Total depth 7,386 ft.; abandoned.
Cranfill-Reynolds Oil Co.'s No. 6 Moore's Bluff ..... No report.
Cranfill-Reynolds Oil Co.'s No. 7 Moore's Bluff ..... No report.
Yount Lee Oil Co.'s No. 3 Moore's Bluff ..... Sand and shale 7,836 ft. showing oil; trying to blow out.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Ezzel ..... Drlg. hard sand 5,762 ft.
Gulf Prod. Co.'s No. 10 Boyt ..... Rig.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Voiney ..... Standing shale 535 ft.

REFUGIO—REFUGIO COUNTY

Brookins et al's No. 1 Kay ..... Shut down 4,320 ft.
Houston Oil Co.'s No. 1 Rooke ..... Drlg. hard shale 5,432 ft.
Houston Oil Co.'s No. 2-A Fannie Heard ..... Drlg. rock 4,506 ft.
Houston Oil Co.'s No. 1 Doughty ..... To sidetrack 4,932 ft.
Houston Oil Co.'s No. 1 Tom Heard ..... Pulled liner 5,470 ft.
Houston Oil Co.'s No. 1 O'Connor ..... Total depth 5,912 ft.; plugged to 2,524 ft.
Phillips Petroleum Co.'s No. 1 Rose Lambert ..... Comp. flowing 180 bbls. 6,461 ft.
Phillips Petroleum Co.'s No. 1 O'Brien ..... Total depth 6,643 ft.; plugged to 6,250 ft.
Edwin Jones' No. 2-A Mitchell ..... Set 30 ft. screen; comp. flowing 200 bbls. 5,441 ft.
Luling Oil & Gas Co.'s No. 1 Talman, Blk. 104 ..... Oil sand 6,446-58 ft.; set 6⅝-in. casing.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Standing 4,928 ft.
Luling Oil & Gas Co.'s No. 1 City, Lot 16, Blk. 4 ..... Cmtd. 12½-in. csg. 460 ft.
Mission Drilling Co.'s No. 1 O'Brien (workover) ..... Drlg. sand 6,439 ft.
Moody-Seagraves Prod. Co.'s No. 1 Linney, Blk. 41 ..... Drlg. sticky shale 6,208 ft.
Moody-Seagraves Prod. Co.'s No. 1 Rooke ..... Drlg. hard shale and lime 6,504 ft.
Moody-Seagraves Prod. Co.'s No. 1-A St. John ..... Drlg. water sand 6,485 ft.
Moody-Seagraves Prod. Co.'s No. 1 O'Connor (workover) ..... Set 20 ft. screen 6,453 ft.; comp. flowing 150 bbls.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor ..... Location.
Moody-Seagraves and Phillips Pet. Co.'s No. 3-B J. F. Heard ..... Location.
Moody-Seagraves and Phillips Pet. Co.'s No. 1-C J. F. Heard (Independent) ..... Total depth 5,720 ft.; rigged up to work over.
Nichols Oil Co.'s No. 1 Wood ..... No report.
Ed Price's No. 2 Mission River ..... Comp. flowing 150 bbls. net oil 3,665 ft.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Derrick.
Royal Oil Co.'s No. 1 Hornburg (workover) ..... Total depth 5,447 ft.; drlg. plug.
Saxet Oil Co.'s No. 1 L. H. Johnson, Blk. 11 ..... Location.
Saxet Oil Co.'s No. 1 Fox heirs (workover) ..... Total depth 3,963 ft.; shut down.
Saxet Oil Co.'s No. 12 Clint Heard (workover) ..... Dry and abandoned 6,614 ft.
Saxet Oil Co.'s No. 1 Wilson Heard (workover) ..... Drlg. shale 3,647 ft.
Saxet Oil Co.'s No. 1 Ryals (workover) ..... Drlg. sticky shale 5,950 ft.
Sun Oil Co.'s No. 3 Rea ..... Sand 3,646 ft.; cmtd. 8¼-in. csg. 3,642 ft.
L. L. Smith's No. 1 Powers, Blk. 85 ..... Set 10 ft. screen; comp. flowing 420 bbls. in 12 hrs. 6,459 ft.
L. L. Smith's No. 1 L. M. Rogers, Blk. 87 ..... Location.
L. L. Smith's No. 1 Rodgers ..... Drlg. hard lime 3,431 ft.
Union Producing Co.'s No. 11 Fannie Heard ..... Drlg. sand 3,715 ft.
Union Prod. Co.'s No. 3 Fox ..... Set 30 ft. screen 3,675 ft.; swabbing.
Union Prod. Co.'s No. 2 Moss-Powers, Blk. 109 ..... Location.
Union Prod. Co.'s No. 5 Powers ..... Drlg. hard lime 4,219 ft.
Union Prod. Co.'s No. 8 Powers, Blk. 82 ..... Location.
Union Prod. Co.'s No. 6 Nancy J. Ryals ..... Location.
Union Prod. Co.'s No. 1 Rose Lambert ..... Location.
Union Prod. Co.'s No. 1 Shelton ..... Location.
Union Prod. Co.'s No. 1 J. Shay ..... Location.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Martha Moss ..... Drlg. shale and lime 6,940 ft.
Vacuum Oil Co.'s No. 8 Farquahar ..... Derrick.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Oil sand 5,623 ft.; cmtd. 4½-in. csg.
Vacuum Oil Co.'s No. 30 Miller ..... Drlg. sandy lime 2,341 ft.
Vacuum Oil Co.'s No. 31 Miller ..... Location.
Vacuum Oil Co.'s No. 6 Bayou State ..... Comp. flowing 200 bbls. oil 4,416 ft.; quit flowing; ran tubing and swabbing.

EDGERLY—CALCASIEU PARISH

Rex Petroleum Co.'s No. 13 Hunter ..... Drlg.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Landry ..... Set 3 joints screen 2,648 ft.; comp. flowing 840 bbls. pipe line oil.
Calcasieu Oil Co.'s No. 1 State ..... Drlg. sand showing oil 3,963-75 ft.
Calcasieu Oil Co.'s No. 22 Watkins ..... Sand and shale showing oil 2,855 ft.; set 6⅝-in. csg. 2,827 ft.
R. E. Seiss' No. 1 Vincent ..... Cap rock 1,942-80 ft.
The Texas Company's No. 7 State ..... Drlg shale 5,201 ft.
The Texas Company's No. 8 State ..... Location.
Yount Lee Oil Co.'s No. 33 State ..... Set 3 joints screen 2,687 ft.; comp. flowing 1,200 bbls., 10% water.
Yount Lee Oil Co.'s No. 34 State ..... Location.
Yount Lee Oil Co.'s No. 35 State ..... Set 3 joints screen 2,696 ft.; comp. pumping 200 bbls. fluid, 90% water.
The Texas Company's No. 36 State ..... Location.
The Texas Company's No. 37 State ..... Location.
The Texas Company's No. 38 State ..... Location.
The Texas Company's No. 39 State ..... Location.
The Texas Company's No. 40 State ..... Location.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 9 Housierre Latrielle ..... No report; previous depth 8,464 ft.

VINTON—CALCASIEU PARISH

Edgerly Pet. Co.'s No. 2 McLean ..... Total depth 3,247 ft.; set 1 joint screen 2,860 ft.; bailed dry; abandoned.
Gulf Ref. Co.'s No. 69 G.&N.G. (workover) ..... Comp. flowing 600 bbls. 3,032 ft.
Gorbat Oil Co.'s No. 1 Clement Lyons ..... Total depth 4,040 ft.; set 1 joint screen 3,510 ft.; sanded up.
Vinton Petroleum Co.'s (Lucky Ten) No. 1 Lizzo ..... Total depth 3,326 ft.; preparing to work over.
Vinton Pet. Co.'s No. 2 Gray (workover) ..... Drlg. gumbo 3,774 ft.
Vinton Petroleum Co.'s No. 10 Gray ..... Set 1 joint strainer 3,640 ft.; comp. flowing 300 bbls. pipe line oil daily.
Wilson-Broach's No. 2 Wilson (workover) ..... Set 30 ft. screen 3,617 ft.; comp. flowing 500 bbls. pipe line oil.
Wilson-Broach's No. 5 Wilson ..... Derrick.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Fishing drill stem 6,085 ft.
Rycade Oil Corp.'s No. 4 State ..... Drlg. hard sand 4,400 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 10 Yount Lee ..... Drlg. hard sand and lime rock 857 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 763 Fee ..... Drlg. shale and lime 4,291 ft.
Union Sulphur Co.'s No. 764 Fee ..... Drlg. salt 6,039 ft.; top salt 4,453 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe ..... Drlg. hard rock 5,109 ft.
O'Hara et al's No. 1 Schrader ..... Shut down for fuel 1,794 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. ..... Drill stem stuck 7,584 ft.
The Texas Company's No. 1 J. H. Murdock, Fresno ..... Drlg. shale 6,214 ft.
Mills Bennett Prod. Co.'s No. 2 Reece, Allen ..... Drlg. rock 1,978 ft.
Mills Bennett Prod. Co.'s No. 2 Random, Allen ..... Location.
Mills Bennett Prod. Co.'s No. 2 Allen ..... Total depth 5,187 ft.; abandoned
Mills Bennett Prod. Co.'s No. 1 Poole (workover) ..... Fishing 4,374 ft.
Faust et al's No. 5 Faust ..... Coring sand 5,637 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights ..... Total depth 4,261 ft.; sidetracking lime 3,469 ft.
Freeport Sulphur Co.'s No. 2 Seaburn ..... Drlg. rock 1,121 ft.
Freeport Sulphur Co.'s No. 1 Tolar, Stratton Ridge ..... Anhydrite 1,457 ft.; abandoned.
Layne et al's No. 7-A Wisdom, Damon Mound ..... Drlg. hard rock 2,033 ft.
Rycade Oil Corp.'s No. 2 Seaburn, Stratton Ridge ..... Drlg. sand and shale 4,157 ft.
Steel & Strickland's No. 1 Lockbridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Speer, A. A. Talmadge Sur. ..... Drlg. water sand 231 ft.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Drlg. shale and lime 4,196 ft.
Shell Pet. Corp.'s No. 2 Herff, Moss Bluff ..... Total depth 5,755 ft.; hard shale and lime; cmtd. 9⅝-in. csg.

GRIMES COUNTY

Cullen & West's No. 1 Bookman, J. Greenwood Sur. ..... Drlg. gumbo 2,273 ft.
Deering et al's No. 1 Munker, Darius Gregg Sur. ..... Drlg. shale 3,406 ft.
Deering & Noble's No. 1 Templeton, 6 miles south of Navasota ..... Shut down 3,500 ft.

HARDIN COUNTY

D. O. Speight's No. 1 fee, near Batson ..... Shut down 2,857 ft.

HARRIS COUNTY

Cypress Oil & Development Co.'s No. 2 Kitzman ..... Drlg. gumbo 200 ft.
Gulf States Oil Co.'s No. 1 Angsperger ..... Drlg. sand and lime 3,044 ft.
Humble Oil & Ref. Co.'s No. 1 Gerring, Mykawa ..... Location.
Humble Oil & Ref. Co.'s No. 4 Minnetex, Mykawa ..... Hard sand, shale and lime 1,981 ft.; set 13⅜-in. csg. 1,769 ft.
Sloane Prospecting Co.'s No. 1 Wasova ..... Spudded.
W. C. Turnbow et al's No. 1 Miller, Arthur McCormick Sur. ..... Drlg. shale and lime 3,690 ft.

JACKSON COUNTY

Jackson County Oil Syndicate's No. 8 Drushell, Edna ..... Gas sand 3,866-70 ft.; cem. 6⅝-in. casing 3,864 ft.
Wright Bros.' No. 2 Lee ..... Shut down 3,947 ft.
Warner-Quinlan's No. 1 Hungerford, Henry Smith Sur. ..... Location.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234. ..... Driving piling for derrick.
Keith et al's No. 1 Reed-Hankamer ..... Rig.
The Texas Company's No. 4 Pipkin, Big Hill ..... Drlg. hard sand 3,342 ft.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill ..... Shut down 112 ft.
Humble Oil & Ref. Co.'s No. 1 Breeding, Moss Bluff ..... Drlg. shale 6,362 ft.
Humble Oil & Ref. Co.'s No. 1 Orlando Hylton, Moss Bluff ..... Drlg. shale 6,528 ft.
Humble Oil & Ref. Co.'s No. 1 Sergent, Moss Bluff ..... Total depth 5,741 ft.; oil sand 5,725-37 ft.; setting csg.

Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4 ..... Derrick.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherds Mott ..... Coring sand 5,037 ft.
Empire Gas & Fuel Co.'s No. 1 Baker, Citrus Grove ..... Trying to kill gas blowout 6,254 ft.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, South of Conroe ..... Shut down 678 ft.; gumbo.
Price & Whitehead's No. 2 Guerges ..... Shut down 2,956 ft.

NACOGDOCHES COUNTY

E. L. Burke et al's No. 1 Latimer, Jose De Los Santos Sur. ..... No report.

REFUGIO COUNTY

Blanco Oil Co.'s No. 1 Dorman ..... Shut down 3,120 ft.

SAN JACINTO COUNTY

E. P. Edwards et al's No. 1 Bennett, northwest of Cold Springs ..... Rig.

VICTORIA COUNTY

Houston Oil Co.'s No. 1 McFaddin, C. O. Edwards Sur. ..... Abandoned 4,635 ft.
The Texas Company's No. 1 McFaddin, H. Bonny Sur. ..... Sand 6,510 ft.; to make drill stem test.
Lion Oil & Ref. Co.'s No. 2 McFaddin, M. Travlers Sur. ..... Total depth 6,454 ft.; cmtd. back to 3,760 ft.; to test gas sand.
Newton et al's No. 1 West ..... Shut down 1,550 ft.

SOUTH LOUISIANA

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Drlg. gumbo 375 ft.
J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Drlg. sand and shale 6,231 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Derrick.
Dr. Thomas et al's No. 1 John Hewitt ..... Location.
Vacuum Oil Co.'s No. 1 Wait, Iowa ..... Rig.

CAMERON PARISH

Shell Petroleum Corp.'s No. 2 State, Black Bayou ..... Location.
Shell Petroleum Corp.'s No. 16 Watkins, Black Bayou ..... Building derrick.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Total depth 5,248 ft.; sidetracked 5,195 ft.; drill stem stuck.
The Texas Company's No. 6 State, Calcasieu Lake ..... Drlg. anhydrite 2,209 ft.
The Texas Company's No. 7 State, Calcasieu Lake ..... Location.

IBERIA PARISH

The Texas Company's No. 6 Vermillion Bay ..... Driving piling.

IBERVILLE PARISH

Gulf Ref. Co.'s No. 1 Gay, Bayou Choctou ..... Drlg. sand 681 ft.
Shell Pet. Co.'s No. 5 Wilbert, White Castle ..... Total depth 5,004 ft.; gray sand; sidetracking.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 8 Wilbert, Bayou Des Glaise ..... Fishing stuck drill stem 3,640 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Hard sand 4,496 ft.; reaming.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue ..... Bldg. derrick.

JEFFERSON PARISH

Humble Oil & Ref. Co.'s No. 1 Delaware, Sec. 2-16s-23e ..... Drlg. sandy shale 7,629 ft.

JEFFERSON DAVIS PARISH

H. T. McClain et al's No. 1 Trimble Atterbury, Welsh, Sec. 16-9s-5w ..... Rigging up.
Vacuum Oil Co.'s No. 1 Tietje, Roanoke ..... Drlg. sand and gravel 249 ft.

PLAQUEMINE PARISH

Gulf Ref. Co.'s No. 2 Buras Levee Board ..... Rigging up.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaille ..... Drlg. shale 1,100 ft.
The Texas Company's No. 4 State, Garden Island ..... Total depth 4,414 ft.; pulled stuck drill stem 3,495 ft.
The Texas Company's No. 5 State, Garden Island ..... Location.

ST. JAMES PARISH

Convent Oil Co.'s No. 2 Jacobs, Sec. 28-11s-4e ..... Set screen 1,824 ft.; shut down.

ST. MARTIN PARISH

The Texas Company's No. 3 Iberville Land ..... Location.
The Texas Company's No. 4 St. Martin, Hager ..... Derrick.
The Texas Company's No. 5 St. Martin, Hager ..... Derrick.

ST. TAMMANY PARISH

Washington-St. Tammany's No. 2 Caussack, Sec. 5-6s-10e. Drlg. gumbo 1,380 ft.

TERREBONNE PARISH

Louisiana Gas & Fuel Co.'s No. 9 Minor, Houma ..... Drlg. sandy shale 2,351 ft.
The Texas Company's No. 1 L.L.&E., Bay St. Elaine ..... Derrick.
The Texas Company's No. 5 State, Bay St. Elaine ..... Drlg. sandy shale 865 ft.
The Texas Company's No. 4 State, Caillou Island ..... Location.
The Texas Company's No. 5 State, Caillou Island ..... Drlg. salt 4,520 ft.
The Texas Company's No. 6 State, Bay St. Elaine ..... Location.
The Texas Company's No. 3 State, Dog Lake ..... Drlg. salt 5,948 ft.
The Texas Company's No. 4 La. L. & E., Four Isle ..... Drlg. hard lime 6,841 ft.
The Texas Company's No. 2 La. L. & E., Bay Junop ..... Drlg. plug 5,990 ft.
The Texas Company's No. 6 State, Lake Pelto ..... Derrick.
The Texas Company's No. 6 State, Lake Barre ..... Location.
The Texas Company's No. 7 State, Lake Barre ..... Derrick.
The Texas Company's No. 8 State, Lake Barre ..... Derrick.
The Texas Company's No. 9 State, Lake Barre ..... Location.

VERMILLION PARISH

Pure Oil Co.'s No. 1 Kaplan, Gueydan ..... Location.

WEST FELICIA PARISH

Putnam Syndicate's No. 1 Como Plantation, Sec. 51-1e-4w. Total depth 3,738 ft.; fishing stuck drill stem.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 50)

The Texas Company's No. 4 Pauline Roamel, 850 ft. from SE line, 450 ft. from SW line of lease, Hodges Sur. ..... T. D. 1,712 ft.; drlg.
The Texas Company's No. 1 Appling, 150 ft. from S line, 450 ft. E of NE cor. of Alexander Sur. in the Hodges Sur. ..... T. D. 2,380 ft.; waiting on cement.
F. L. Thomson's No. 2 Posey, 25 ft. from NW line, 300 ft. from No. 1 ..... Location.

CHAPMAN POOL—WILLIAMSON COUNTY

W. D. Anderson's No. 6-A T. P. Simmons ..... Rig up and shut down.
W. D. Anderson's No. 8 M. V. Lawrence ..... Location.
Bartlett & Wilson's No. 2 R. E. Stewart ..... T. D. 790 ft.; drlg.
Bartlett & Wilson's No. 1 R. E. Stewart ..... T. D. 741 ft.; drlg.
Chapman et al's No. "D" 1 Abbott ..... Location.
Chapman et al's No. "D" 2 Abbott ..... Location.
Chapman et al's No. "D" 5 Abbott ..... Location.
Chapman et al's No. "D" 6 Abbott ..... T. D. 1,617 ft.; drlg.
Chapman et al's No. D-7 J. C. Abbott ..... T. D. 200 ft.; shut down.
Chapman et al's No. "D" 10 Abbott ..... Location.
Collins et al's No. 6 Lawrence ..... Location.
J. L. Collins & Co.'s No. 7 M. V. Lawrence, 150 ft. from E line, 215 ft. from S line of 27-ac. tract in the S. Miller Sur. ..... Csg. setting; shut down for water.
Ertell and others' No. 6 J. C. Abbott ..... T. D. 1,730 ft.; drlg. top Serpentine 1,690 ft.
E. E. Ertell's No. 7 J. C. Abbott ..... T. D. 700 ft.; drlg.
Horn & Stratton's No. 9 J. C. Abbott, W side of lease, 150 ft. from S line in the S. Miller Sur. ..... T. D. 2,000 ft.; drlg.
E. L. Chapman et al's No. 2-A Sides ..... Rigging up.
J. L. Collins & Co.'s No. 5 M. V. Lawrence, 150 ft. from W line, 515 ft. from S line of 27-ac. tract, S. Miller Sur. ..... T. D. 1,462 ft.; drlg.
McNeal et al's No. 7 Kilgore ..... T. D. 1,090 ft.; drlg.
E. C. Mead's No. 1 Abbott, 100 ft. from N and W lines of 6-ac. tract, S. Miller Sur. ..... T. D. 2,166 ft.; shut down.
Sequoia Oil Co.'s No. 7 T. P. Simmons ..... Location.
G. Stratton's No. 5 J. C. Abbott, 450 ft. from E line, 150 ft. from S line of 32-ac. tract, S. Miller Sur. ..... T. D. 1,736 ft.; set csg.

PETTUS AREA—BEE COUNTY

Batex Petroleum Co.'s No. 3 Burnett, 360 ft. from N line, 600 ft. from E line of 320-ac. tract, Kerr Sur. ..... Location.
Batex Oil Co.'s No. 2 Burnett, 361 ft. N line, 900 ft. from E line of lease in the south John Pace Sur. ..... T. D. 3,708 ft.; plugged back; estimated 5,000,000 ft. wet gas; shut in.
J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur. ..... T. D. 3,734 ft.; shut down for fuel.
Moody-Seagraves Producing Co.'s No. 2 McKinney, 3,340 ft. from E line, 450 ft. from S line, McKinney tract, R. C. Ballard Sur. ..... Location.
The Texas Company's No. 2 J. R. Scott, 200 ft. from N line, 150 ft. from W line, J. M. Urango Sur. ..... T. D. 690 ft.; shut down.
The Texas Company's No. 3 J. R. Scott, 7,100 ft. from No. 1, SW ..... Location.
Union Producing Co.'s No. 13 Ray, George Habbermacher Sur. ..... Rigging up.
Union Producing Co.'s No. 25 Ray, 1,700 ft. from S line, 1,400 ft. from E line of P. Miller Sur. ..... T. D. 4,217 ft.; completed; dry and abnd.
Union Producing Co.'s No. 26 Ray, 3,500 ft. from S line, 2,000 ft. from E line, P. Miller Sur. ..... Location.

AGUA DULCE FIELD—NUECES COUNTY

South Texas Production Co.'s No. 3 Walter, 800 ft. from S line, 460 ft. from E line of Walters tract in Section 34 ..... T. D. 1,984 ft.; setting csg. to test gas with 650 lbs. preasure; coring.

SAXET FIELD—NUECES COUNTY

Saxet Oil & Gas Co's No. 2 Donnegan, 2,150 ft. due S of No. 1 Donnegan ..... T. D. 6,459 ft.; coring.
Saxet Oil & Gas Co.'s No. 7 Dunn, 2,400 ft. NW and 200 ft. NE of S cor. of Dunn farm ..... Derrick.
Moody-Seagraves Producing Co.'s No. 1 Smith, 450 ft. from N and E line of 120-ac. tract, J. Dunn Sur. ..... T. D. 2,840 ft.; drlg.
Pearson Properties, Inc.'s No. 1 State National Bank ..... T. D. 4,811 ft.; coring.

LION McFADDEN POOL—VICTORIA COUNTY

Lion Oil Refining Co.'s No. 2 McFadden, 1,917 ft. W of NE cor. and 512 ft. at right angles from N line of Edwards Sur., 660 ft. E of No. 1 in the M. J. Travesia Sur. ..... T. D. 6,425 ft.; preparing to shoot drill stem.

LAREDO DISTRICT

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 1 Edge-Hahl, 150 ft. from N line, 150 ft. from W line, Sur. ..... T. D. 3,985 ft.; drlg.
F. M. Frasher and R. F. Schoolfield's No. 1 Duval Land Co., 990 ft. from N line, 1,320 ft. from W line, Sur. 123 ..... T. D. 2,308 ft.; sand 2,303-08 ft.; setting csg.

RANDADO POOL—JIM HOGG COUNTY

J. W. Pippin's No. 1 Hinnant, 150 ft. each way from SW cor., Blk. 11, Sur. 147 ..... Derrick.

KOHLER POOL—DUVAL COUNTY

Co-operative Drilling Co.'s No. 4 John Dinn, 450 ft. from N line, 450 ft. from W line, Blk. 4, Sur. 454 ..... Sand 1,729-42 ft.; comp.; 30,000,000 ft. gas.
Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164 ..... T. D. 365 ft.; drlg.

S. R. C. POOL—DUVAL COUNTY

The Texas Company's No. 1 Duval Ranch, 2,490 ft. S line, 150 ft. W line of Sur. 297 ..... Location.

COLE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 4 Benavides, 150 ft. from NE line, 450 ft. from NW line, Blk. 28, Sur. 174 ..... Rigging up to drill deeper; total depth 1,760 ft.

ROMA POOL—STARR COUNTY

The Texas Company's No. 5-A V. C. de Guerra, 675 ft. from N line, 675 ft. from E line, Share 305, Por. 67, Jurisdiction of Mier ..... T. D. 3,725 ft.; drlg.

MID-OJUELOS—WEBB COUNTY

O. W. Killam's No. 2 Garcia, 605 ft. S line, 150 ft. E line, Blk. 43, Los Ojuelos grant ..... T. D. 100 ft.; drlg.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 684 ..... T. D. 2,365 ft.; drlg.

COLE FIELD—WEBB COUNTY

Alamo Drilling & Leasing Co.'s No. 2 Benavides, 660 ft. from N line, 660 ft. from E line, Blk. 16, Sur. 694 ..... T. D. 2,290 ft.; comp.; 10,000,000 ft. gas.

CHARCO REDONDO POOL—ZAPATA COUNTY

C. R. Moore and J. W. Moore's No. 1 Adela G. de Flores, 330 ft. from NW line, 330 ft. from NE line, Doty Subd. ..... T. D. 2,000 ft.; standing.
C. R. Moore and J. W. Moore's No. 2 Adela G. de Flores, 150 ft. from NE line, 150 ft. from SE line, Doty Subd. ..... T. D. 150 ft.; standing.

JENNINGS-MARTINEZ-ZAPATA

South Texas Production Co.'s No. 1 Gutierrez, 2,000 ft. from E line, 660 ft. from NW line of Survey 162 ..... T. D. 1,733 ft.; shut down.

JENNINGS-MUCKELROY POOL—ZAPATA COUNTY

Allied Oil & Gas Co.'s No. 12 Guiterrez, 750 ft. from NE line, 3,663 ft. from SE line, Share 4, Fansler Partition, Comitas grant ..... T. D. 100 ft.; standing.
Allied Oil & Gas Co.'s No. 1 D. Bustamente, 361 ft. from NW line, 150 ft. from NE line, Blk. 12, Share 10, Fansler Partition, Comitas grant ..... Rigging up.
Allied Oil & Gas Co.'s No. 13 E. Guiterrez, 150 ft. from NE line, 2,763 ft. from SE line, Share 4, Fansler Partition, Comitas grant ..... Location.
Nordan and Morris and Grimm and Yakey's No. 1 S Bustamente, 990 ft. from NE line, 150 ft. from NW line, Share 34, Fansler Partition, Comitas grant ..... Derrick.
Pal-Mar Oil Co.'s No. 1 Jose Bustamente, 150 ft. from NW line, 150 ft. from SW line, Share 35, Fansler Partition, Comitas grant ..... T. D. 1,150 ft.; drlg.
W. R. Shankle's No. 6 Guiterrez, 1,800 ft. from NE line, 2,989 ft. from NW line, Share 4, Fansler Partition, Comitas grant ..... Derrick.
W. R. Shankle's No. 7 Guiterrez, 2,100 ft. from NE line, 2,898 ft. from NW line, Share 4, Fansler Partition, Comitas grant ..... Location.
S. R. C. Oil Co.'s No. 1 Cuellar, 150 ft. S and W lines, Block 16, Sur. 62 ..... Location.
S. R. C. Oil Co.'s No. 1 F. Cuellar, 300 ft. from S line, 300 ft. from W line, Blk. 6, Sur. 285 ..... Location.
S. R. C. Oil Co.'s No. 2 F. Cuellar, 300 ft. from S line, 300 ft. from E line, Blk. 8, Sur. 19 ..... Location.
S. R. C. Oil Co.'s No. 10-A Cuellar, 150 ft. from NW line, 150 ft. from SW line, Blk. 10, Sur. 65 ..... Spudded.
S. R. C. Oil Co.'s No. 9-B Cuellar, 660 ft. from SW line, 150 ft. from SE line, Blk. 7, Sur. 65 ..... T. D. 200 ft.; drlg.
S. R. C. Oil Co.'s No. 3-C (12-B) Trevino ..... Location.
Whicker, Arnold & Ahler's No. 3 Garza, 150 ft. from SW line, 450 ft. from SE line, Blk. 1, Zerro Ranch Subd., Comitas grant ..... Rigging up.
J. W. Winch's No. 1 Bustamente, 450 ft. from NW line, 150 ft. from NW line, Blk. 7, Share 5, Fansler Partition, Comitas grant ..... T. D. 1,251 ft.; junked and abnd.
J. H. Winch's No. 2 A. Bustamente, 450 ft. from NW line, 150 ft. from NE line, Blk. 7, Share 5, Fansler Partition, Comitas grant ..... Rigging up.

JENNINGS-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 1 Slator, Blk. 1, Slator Pasture, Borrego grant ..... Spudded.
O. W. Killam's No. 32-B Cuellar, Sur. 277 ..... T. D. 1,446 ft.; drlg.

MIRANDO VALLEY POOL—ZAPATA COUNTY

O. W. Killam's No. 1 Lopez, 181 ft. from W line, 150 ft. from S line, Blk. 16, Sur. 251 ..... T. D. 1,935 ft.; drlg.

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COMPLETE PIPE LINE CONSTRUCTION OUTFIT FOR LAYING BOTH WELDED AND SCREWED LINE. This outfit includes welding equipment, pipe cleaning and coating equipment, tractors, ditching machines, Mahoney pipe screwing machine, also complete equipment for housing and feeding 1,000 men. Address all inquiries Box 1162, Room 803, Tulsa, Okla.

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SULLIVAN

AIR COMPRESSOR

Sullivan Angle Compound type WJ-3 Air Compressor, size 20x12x14", capacity 1300 cu. ft. of air per minute against 100 lbs. pressure, with all accessories. For driving this machine General Electric 200 H. P. slip ring motor A. C. 220-volt 3-phase 60-cycle with controller. This compressor was purchased in July, 1929, and is equal to a new machine.

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618 West Lake Street, Chicago, Ill.

FOR IMMEDIATE SALE
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FOR SALE—165 H.P. Bessemer direct driven gas engine suitable for air lift or gasoline plant. In first-class condition, only used about four months. Write W. D. Chew, 418 Ricou-Brewster Bldg., Shreveport, La.

ONE Parkersburg combination wood and steel friction drive drilling machine, complete with four-cylinder high-speed modern drilling engine and tools. This equipment has drilled eight wells, had the best of care and is in A-1 condition. Price reasonable. Located near Bradford, Pa. Write Box E-346, The Oil and Gas Journal, Tulsa, Okla.

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WILL buy good used 5⅛ and 6⅝-inch casing. Must be cheap. "Sunray," 1001 Midland Savings Bldg., Denver, Colo.

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Deadweight pressure gauge tester to 100 pounds. State price.
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dealers in
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List your surplus with us.
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200,000 ACRES SOLID BODY, good showing oil and gas, fine structure, excellent geological report, fifty cents per acre in fee including mineral rights. Perfect title. I own two complete heavy rotary rigs. Want cash to develop. Require fifty thousand minimum payment on land. No its not Mexico. Information only upon proof of financial ability to handle. Immediate delivery guaranteed. M. E. Bogle, San Antonio, Texas.

EXTREME LOW DRILLING COSTS and gusher (up to 5,000 bbls.) production make Williamson County, Texas, serpentine plugs the best venture. $4,000 to $8,000. Covers entire cost of blocking and the drilling of the well Inquiry solicited.
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Geologically Selected Drilling Blocks
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$8.00 BUYS DEED part oil 10 acres, Oklahoma County. 300 wells now drilling. Joe Milam, Dept. U, Oklahoma City, Okla.

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ESTABLISHED LOS ANGELES REGULATOR manufacturer wishes to correspond with established firms at Dallas, Tulsa, Houston, Denver, Chicago and New York. Must be capable of diligently prosecuting the sale and service of a general line of oil and gas company pressure regulators and controllers. Firms handling nonconflicting allied products are especially invited to write. Answer Box E-332, The Oil and Gas Journal, Tulsa, Okla.

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I own best and only available gusher holdings in entire Oklahoma City oil field, in sand producing area, offsetting Morgan-Stout wild well and other famous wells, that will produce 60,000 bbls. or more daily.
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Desire high-class investment brokerage house to handle this marvelous proposition in best advertised oil field in United States.
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COMPLETE REPORT and valuation made on producing properties—royalty and other interests in Mid-Continent field by practical and experienced man. Small or large interests reported on. Personal inspection made. Fred W. Eastman, 1302 Philtower Bldg., Tulsa, Okla.

OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses, 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

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PROPOSITIONS solicted for completing Tex-Oil Production Co.'s Redman Well No. 1, Ward County, Texas, now 5,070 feet, for submission to court Dec. 9. Lee Monroe, receiver, Barstow, Tex.

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THIS is the buyers market! Not in all my oil experience have I seen such oil lease bargains in Texas. Am now selling leases $3 to $5 per acre. Right in active big play. Should interest any looking to the future. W. J. Dobbs, 824 Wilson Bldg., Dallas, Texas.

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Experienced Gas Man for new Maryland construction project of installing 75 miles of lateral and spur lines and ten distributing systems. Here is opportunity for energetic man to associate himself with public utility corporation that has bright future. $5,000 investment required. Investment secured and substantial interest. State salary, experience and references. For information address Post Office Box 627, Baltimore, Maryland.

WANTED — SALESMEN calling on the oil jobbing trade to take orders for our BLACK BABY metallic gear lubricant, the new lead base automobile gear lubricant. F. E. Martin & Co., Lake Bluff, Ill.

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PIPE-FITTER foreman wants connection with reliable company. Nine-year modern refinery experience in construction and maintenance. Am draftsman and can handle welders. References. Write Box E-348, The Oil and Gas Journal, Tulsa, Okla.

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MAPS
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A. L. Gurley, Clovis, N. Mex.
P. O. Box 211 Phone 392.

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BARGAIN LEASES AND ROYALTIES S. W. Lincoln and Okla. Counties. L. G. Thorp, Harrah, Okla.

NEW MEXICO leases; Lea, Eddy and Chaves Counties. H. T. Orcutt, 1016 Colcord Bldg., Oklahoma City, Okla.

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Oil Royalties
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KANSAS oil and gas leases for sale near Briggs & Smith test in Osage County; now drilling at 700 feet; 40 and 80-acre leases, $5 per acre. Address C. Edwin, 516 Polk St., Topeka, Kans.

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LEASES—PRODUCTION

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Inquiries Invited.

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ROYALTIES—PRODUCTION

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Royalty spread of 2,550.4 acres in RUSK County, well located in or near Major Companies' blocks.

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FORT WORTH NAT'L BANK
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INCORPORATIONS

DELAWARE incorporator. Charters fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Furnace Oil Demand Gains in Chicago

Shipments Against Contracts in Good Volume Following Colder Weather. Gasoline Spot Buying Continues Light

By J. B. Waldo

CHICAGO, Nov. 24.—Slightly colder weather with the threat of still colder weather to come stimulated the demand for furnace oils today. The instructions for shipments against contracts were of good volume and there was some placing of new business and considerable inquiry in a general way regarding supply and prices. The kinds wanted were chiefly the 28-30 light fuel oil and zero gas oils although all zero oils were in more or less demand. Prices were unchanged, the quotations on zero oils holding remarkably well considering the 60 days of warm weather which this territory has had.

Gasoline moved along in the same routine fashion, the bulk of the business being on contracts with spot buying light. Major refiners were holding their spot quotations but in the open market there was an easier tendency although quotations were unchanged, the usual quotation being 4½ cents to the trade for U. S. Motor gasoline, Group 3. There are some sellers who are selling the 400 endpoint at the same price as the U. S. Motor gasoline, Group 3. There are some selling the 400 endpoint at the same price as the U. S. Motor grade and others who to a large buyer with a real order would shade their price a little from the 4½-cent rate.

There was little evidence of an industrial demand for heavy fuel oil. For one thing it is the last week in the month with one day devoted to Thanksgiving Day and many buyers will make their next order come in December. In the heavy industrial fuel oils as in the lighter furnace oils the prices of a good zero oil are firmly held, there being a range of 10 to 20 cents between the price for a real zero and that of an ordinary cold test oil. Industrial gas oil suitable for the use of the gas maker is quiet but prices are at least steady although some recent sales have been made at prices which are really less than the prices named to the trade by the leading refiners. The prediction is freely made that if the weather does turn cold and the colder weather holds for one week that there will be very active demand for zero oils and that a rather strong advance in prices may be made by the refiners who have the material to supply the demand.

Fine Weather Increases Consumption

Fine weather over the entire territory has resulted in large consumption of gasoline which may run materially ahead of last year. Jobbers as a rule report a gallonage quite as good as last year. The larger companies state that their business is good but in some cases not increasing the volume of the 1929 sales. This they attribute to the number of new outlets. It is pointed out that a new class of jobbers is coming along from whom much may be heard in the next three or four years. One New York oil man who came to the West, chiefly to study this part of the industry, expressed the belief that in about four years the beginners of today would form a very important part of the industry.

Selling these jobbers has been considered rather risky by some of the major companies. In some towns the majors have their established customers whom they cannot offend by selling to the beginners who by their active efforts to get business are causing concern among established concerns that have come to feel they have a right to the trade in their locality which must not be interfered with. But there are refiners and marketers who have studied the situation and they are profiting by the active efforts of these young concerns to increase their business.

Contract Business Good

In spite of the good demand for this season of the year, the gasoline market was rather quiet last week. The major refiners with one exception were holding for the 5¼ cents, Group 3, for their U. S. Motor grade to spot buyers, of whom they had few, but their contract business was good and most of them knocked wood when they made the statement for they are all expecting weather which will tie up transportation and reduce the consumption. In the Far West this weather has arrived and in some of the states there has been some snow. This may prove to be only a temporary interruption and it may prove the beginning of real winter with icy roads caused by the freezing of the melted snow.

The open market for spot gasoline changed little during the week. The usual price on a Group 3 basis is 4½ cents, some sellers trying for 4⅝ cents and 4¾ cents outside of differential territory. This is for full specification material. Prices were quoted to marketers of 4¼ cents, Group 3, for gasoline of North Texas origin. The same quotation made a price of 4⅜ cents for 60-62 437 endpoint gasoline. The refiners are trying to advance their prices and in some cases they have asked more money but there seems to be someone who is always willing to quote the lower price.

The jobber is not particularly interested in gasoline right now, the gasoline business with the average jobber being largely a matter of routine. He does not expect any great changes either in gallonage or in the prices. He considers himself fortunate if there is no price cutting in his vicinity. His furnace oil business if he has entered that field gives him enough to think about with the vagaries of the weather, the burner and the home owner, to say nothing of refiners who persist in furnishing furnace oil with a bad odor.

Demand for Antiknock Gasoline Good

The demand for the higher gravities has been light while the call for reliable antiknock gasoline, especially for the Ethyl Gasoline, has been good. The percentage of Ethyl Gasoline sales as compared with total sales of white gasoline is increasing, according to figures from the Ethyl Gasoline Corp.

A fact that stands out in connection with the manufacture and sale of Ethyl Gasoline is that many motorists are becoming accustomed to the use of high compression engines which require a gasoline of the type supplied by Ethyl Gasoline. If the sale of this product has grown to one-fifth of the total consumption in two years, will not the future user of gasoline require a motor fuel of the same general characteristics?

The change to the higher compression engines apparently appeals to the motorist and there may be a constantly growing demand for suitable motor fuel.

Condition over this territory as to price cutting, excessive competition and building of new stations show little change. In Detroit there has been no real change and in the southern Minnesota territory prices range from 11 to 17 cents with a 3-cent tax and a 3-cent freight haul, so that no one there is getting a fair price for gasoline.

Much the same condition is reported from several points and in nearly every case the trouble has been brought about not by some small distributor trying to get more business but by the excessive margins allowed to jobbers by some of the larger oil companies which makes it easy and apparently safe for the jobber to make a lower price.

Natural Gasoline Out of Its Huddle

Natural gasoline has got out of its huddle, and is no longer quoted at 4½ cents for all grades, the last price quoted here ranging from 4⅜ cents for Grade C to 4¾ cents for Grade A. There has been complaint as to deliveries and several refiners, most of them in North Texas, have stated that they were sold up for the present on gasoline which may be the reason for the slow deliveries. Reports have been made of meetings held to improve the condition of the refining branch of the industry and it seems probable that an attempt will be made to get better returns for the refiners. The sporadic crude cuts threaten the stability of crude prices and have some effect in keeping prices where they are.

The average refiner at the present time is running his distillates about 40 per cent kerosene. The selling price to the trade of a good white 38-40 distillate is 3 cents and kerosene will bring little more so the refiners seem to believe that their chance for getting a higher price for their kerosene is best if they use the material to improve the quality of their distillate.

The demand for kerosene has been a little more active, according to most refiners, although the increase is not pronounced, but there is a little more buying and prices are at least no lower.

Furnace Oil Movement Steady

Distillates and other furnace oils have been in steady movement chiefly against contracts. Withholding of shipping instructions has made some refiners a little nervous and they have made offers of the least wanted material not so much at lower prices for they are holding steady at yet, but as indicating the result of a continuance of the mild weather.

The family consumption of furnace oil has probably been cut in half in many large sections of the country by the warm weather which has broken all records for November. The local jobber has been unable to move as much from his storage as he hoped to do and he has had just that much less storage to fill. The slightly colder weather of the latter part of last week had not lasted long enough to make any impression on country stocks so that there was no refill demand from the country dealers.

Distillates are steadily held as a rule and anything that is reduced in price is some reason for the cut, either in the oil itself or the needs of the refiner for storage space or cash.

The zero gas oils are firmly held and seem to have increased in price a little. There is little of the lower range of the bracket that is available. Occasionally some marketer has offered a little distillate or even gas oil for sale having been caught by the fact that his customers could not take in all the oil that was coming to them and the refiner making his shipments on schedule.

Offerings Snapped Up Quickly

In the lighter grades of fuel oil there have been a few emergency offers of oil that was fairly desirable which was to be purchased at a little less than the market to the trade, but these offerings if at all desirable were snapped up quickly. In furnace oils the most wanted articles right now are the straw and light amber gas oil and 28-30 fuel oil with a full zero pour test and having a sweet odor with low flash. The market seems bare of these oils and quantities available last week went the same day that they were known to be on the market.

Heavy industrial fuel oils are moving slowly, although the demand is a little better than it was a month back. It is impossible to sell many of the largest users of fuel oils because they are so far behind in taking out their present contracts.

The demand for the 18-22 gravity fuel oil with a low cold test and viscosity is large and seems likely to increase as it makes a good heating oil for the nonautomatic type of burners. All grades of oil with a low viscosity and a zero cold test are in demand for immediate or future orders but anything with a high viscosity or with a cold test higher than 20 degrees is hard to sell.

Little New in Lubricating Oils

There is little if anything new in lubricating oils. The immediate demand is slow. Buying for the next season has been going on but there is no snap to the demand and many are just marking time until something more definite is indicated. The prices of bright stocks and other refinery material are still easy in tone. Industrial lubricating oils are slow to sell. Local refineries are out after the business and their quotation is always the same as the Group 3 prices, but deliveries from Chicago, which amounts to a cut to the amount of the freight in this city and a varying amount outside the Chicago district.

There has been no change in the local price situation. Some of the major distributors are making a lease of the pump and necessary space for its operation in garages. The idea is not new but it has recently been dignified by a public recognition of the practice. In fact, it amounts to a sort of bonus, in addition to the contract discount, for the exclusive sale of the company's gasoline.

PIPE LINE STATEMENTS FOR OCTOBER BUSINESS

The Shell Pipe Line Corp.'s statement for October shows pipe line runs from Texas, Oklahoma and Kansas of 3,090,619.38 bbls., daily average 99,697 bbls.; and shipments of 3,306,732.52 bbls., daily average 106,669 bbls.

The Empire Pipe Line Co.'s October business included runs of 1,941,656.86 bbls., daily average 62,633.93 bbls.; shipments 2,199,419.83 bbls., daily average 70,949.03 bbls.; stocks October 31, 5,038,396.14 bbls.

The Oklahoma Pipe Line Co. in October ran 2,265,807.47 bbls. of crude oil, daily average 72,899.48 bbls. Its shipments were 2,259,883.77 bbls., daily average 72,899.48 bbls.; stocks on November 1, 2,822,113.26 bbls.

The Texas Pipe Line Co. of Oklahoma's runs in October were 663,580 bbls., daily average 21,406 bbls.; deliveries 1,402,414 bbls., daily average 45,239 bbls.; stocks on October 31, including The Texas Company stocks in Oklahoma, 3,953,520 bbls.

The Gulf Pipe Line Co. of Oklahoma's October runs were 1,304,473 bbls., daily average 42,080 bbls.; shipments 1,554,155 bbls., daily average 50,134 bbls.; stocks at end of month, including Gypsy Oil Co. stocks, 7,850,531 bbls.

The Cosden Pipe Line Co. in Oklahoma ran 964,324 bbls. in October, daily average 31,107 bbls.; shipments were 868,359 bbls., daily average 28,012 bbls. The Mid-Continent Petroleum Co., which owns the Cosden Pipe Line Co., had crude stocks at the close of the month of 3,701,526 bbls.

Eastern Market Has Reactionary Tone

With Refinery Stocks Showing Further Gains in the Face of Dull Trading, Buyers Are Manifesting Little Confidence

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Nov. 24.—The East Coast refined products market again showed a reactionary tone during the last week, and prices were lower on lubs, fuel oils and kerosene, with the market for other products in easy position.

With refinery stocks showing further gains in the face of current dull trading, buyers were showing little confidence in the market position, and it was becoming increasingly evident that in the refined products division at least, it will be a buyers' market for some time to come yet. Under these circumstances, buyers are naturally playing a waiting game, and further price recessions would not come as a surprise.

Withdrawal of the export association from the market has left the Gulf kerosene and gasoline market in an unsettled position, and current prices are substantially under those in effect a month ago. With rumors of forward committments at the Gulf at extremely low prices, foreign buyers are holding off the market and pressing for additional concessions. Unless the present trend is checked, it is evident that the Gulf export market will be attractive only for dumping of surplus stocks with no possibility remaining for profitable operations on export sales. This will have a doubly unfortunate effect upon the domestic market, not only reducing the netback to refiners to the point where losses will be recorded instead of the expected profits, but intensifying foreign competition as well and thus still further demoralizing the already none too favorable world market position.

Refinery Gasoline

Gallonage has been fairly well maintained in the refinery market, but competition continues exceedingly keen on tank car sales, and sellers are going under the posted quotation of 7 cents per gallon for U. S. Motor at refinery terminals in numerous instances. Demand, while satisfactory in the aggregate, is still rather spotty, and jobbers are not prone to order forward shipments until the gasoline is actually required.

The increase of more than 250,000 bbls. in gasoline stocks during the week ended November 15, coupled with the gain in refinery operations, came somewhat as a jolt to the East Coast trade and exercised a decidedly bearish influence upon the general situation.

While principal sellers are making an effort to stabilize the market at 7 cents per gallon for U. S. Motor, reports of distressed lots available at various points are having their effect, and it is believed here that the market will sell at 6½ cents or under before the close of the year.

Reports of low prices on sales in the barge market continue, with business reported to have been done around 6¼ to 6½ cents per gallon, at refinery terminals.

Tank Wagon Gasoline

With the exception of a cut of 1 cent a gallon in the tank wagon price in New Jersey, no change in the market, from a price standpoint, is reported this week and business continues keenly competitive, with price cutting still a major factor.

Consumption of motor fuel has held up unexpectedly well during the current month, and sales during the week just ended are reported to have shown an increase over those of the preceding week, largely due to more favorable weather conditions.

With the refinery gasoline market in easy position, however, it is expected that cuts in tank wagon and service station price schedules can be looked for in New York and New England territory before the close of the quarter.

The arrival of colder weather has tended to stimulate the market for premium fuels to some extent, and with demand swinging over to the higher grade gasolines to a considerable extent, less price cutting is to be noted on these grades.

Kerosene

The local refinery market, which has shown a weak undertone during recent weeks, broke this week and leading sellers cut the posted price a quarter cent to 6½ cents per gallon, in tank car lots. This reduction, however, failed to thoroughly readjust the market to current conditions and price cutting continues, with sales of water white reported down to 6 cents per gallon.

There has been a slight increase in jobbing demand for kerosene during the week, but there is apparently still an oversupply at refineries in East Coast area, and refiners are thus not in position to take advantage of the seasonal gain in consumption.

Tank wagon kerosene prices remained unaffected by the reduction in the refinery basis, but it is expected that should the posted price at refineries drop to 6 cents, at which level considerable business is already being done, tank wagon schedules will show a 1-cent a gallon drop.

Fuel Oil

Posted prices for bunker fuel were reduced 10 cents per barrel at a number of points at the Gulf early in the past week, but the local quotation remained unchanged at $1.05 per barrel. There was a fair movement on contract, but spot demand had eased off a little, and the market tone was soft.

While refiners have succeeded in maintaining the posted price in the New York harbor territory, reports of price cutting at points further south along the Atlantic Seaboard continue, and unless this condition should show early improvement, it is considered likely that a further reduction will be necessary locally.

Refiners continue to book contracts for 1931 on a sliding scale basis.

Diesel Oil

Refiners continue to hold the posted price at $2 per barrel, in bulk, f.o.b. refinery terminals. Business is holding up well, but the market is softening in sympathy with the weak market in California, and it would not be surprising to see East Coast refiners lower their Diesel oil quotation to protect their market against shipments from California. Marine interests are contracting ahead in fair volume for 1931, but these contracts are nominal as to price, giving the buyer the benefit of the spot market quotation prevailing at time of delivery of the oil.

Numerous new motor vessels are entering the New York run, and there is sharp competition among refiners for the business of these new vessels. New entries into the freight run out of New York to various world ports largely consist of Diesel-burning vessels, which are far outstripping steamers in new construction for this trade.

Gas Oil

In common with the remainder of the refined products list, gas oil is coming in for selling pressure and the market consequently continues in easy position. The posted quotation of 5¼ cents per gallon for 28 plus oil at refinery terminals is largely nominal, with business being done at a half to three-quarters cent per gallon under this figure.

There is a good movement of gas oil on contract to the manufactured gas companies in this territory, and while these utilities are using bunker fuel oil instead of gas oil in some instances, the competition of the lower priced oil has not yet become severe enough to cut substantially into the gallonage on the lighter oil.

Furnace Oil

No further reductions in posted prices for furnace oil have been made, but price shading, particularly on season contracts, continues a factor, and the market is rather unsettled.

Notwithstanding the price competition in the furnace oil market, consumption is running into record totals in many sections of the territory.

Lubs

The recent cut in Pennsylvania crude prices has forced cylinder oil prices to lower levels, notwithstanding the efforts made by some refiners to maintain the market at previous levels.

Offerings are reported in the local market this week at prices a half to 2 cents per gallon under previous levels, the maximum decline being on cylinder oils. Quotations reported locally are as follows: 600 steam refined, 16½ cents per gallon; 635 steam refined, 18½ cents; 650 steam refined, 23 cents; 600 Pennsylvania flash, 23½ cents; 630 Pennsylvania flash, 29½ cents; 600 Warren E, 23½ cents; 600 Oil City E, 22½ cents; light bright stocks, 27 cents; dark bright stocks, 25 cents per gallon. Even at the reduced levels, it is reported, many of the foregoing grades could be shaded on a firm bid for any substantial quantity.

Notwithstanding the further cuts in cylinder stocks, sellers continue to hold the market for red and pale oils unchanged at previous levels, with a moderate demand reported.

Paraffin Wax

No further price declines materialized in the wax market, but buying is extremely limited and an easy undertone prevails, with indications of an early fractional break in spot quotations.

Buyers remain out of the market to a considerable extent, and with the statistical position of the market growing more unfavorable through the accumulation of heavier surplus stocks at refineries, it is becoming very much a "buyers' market" on all grades.

Petrolatum

Seasonal expansion in demand for petrolatum from the pharmaceutical manufacturing and other trades has tended to stiffen the market position somewhat, and prices are holding fairly steady.

While refinery stocks of petrolatum are understood to be fairly large, the market is well maintained with little selling pressure noted.

Gulf Export Market

There has been a little activity in the Gulf market this week, but the market position is far from settled, and the market is still extremely susceptible to rumors of price shading.

A British company, prominent in the export field, was reported to have bought 2,000,000 gallons of 64-66 in the field at 6 cents per gallon, delivered at New Orleans. An 8,000-ton cargo of navy and 64-66 was reported to have been booked for February loading at the Gulf for shipment to Belgium at 5½ cents for Navy and 6⅜ cents for 64-66. A number of inquiries for other cargoes were in the market, including two 8,000-ton cargoes for 8,000 to 9,000 tons of the four grades of gasoline for January shipment to France, one 9,000-ton cargo of 64-66 for January loading for France, one 6,000-ton cargo of 64-66 for February loading for France, and several part cargoes for shipment over the next three months.

Navy gasoline and other grades were reported available for export at extremely low prices, but investigation disclosed that some of the lower priced material was high in sulphur content, and it was apparent that the general market was being asked to meet the competition of off-grades. This situation is expected to adjust itself shortly, however, with indications pointing to a more stable market basis within the next few weeks.

Kerosene has weakened at the Gulf, and, while sellers are still quoting the the market at 4½ cents for prime white and 5½ cents for water white, it is reported that these prices can be shaded by a quarter cent in some instances.

The current market on gasoline for Gulf shipment is 5½ cents a gallon for Navy, 6⅝ to 6¾ cents for 64-66, 6 cents for 400 endpoint, and 6¼ cents for 390 endpoint. There is considerable buying interest, but operators are deferring placing contracts until the market settles somewhat.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended November 15 totaled 1,272,000 bbls., a daily average of 181,714 bbls., as compared with 1,748,000 bbls., a daily average of 249,714 bbls. for the week ended November 8, and a daily average of 234,964 bbls. for the four weeks ended November 15. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	404,000
New York	597,000
Philadelphia	88,000
Others	126,000
Total	1,215,000
Daily average	173,571
At Gulf Coast ports—	
Galveston district	57,000
Total	57,000
Daily average	8,142
At Atlantic and Gulf Coast ports—	
Total	1,272,000
Daily average	181,714
Daily average four weeks	234,964

Distribution of total imports is as follows:

Crude	658,000
Gasoline	206,000
Gas oil	18,000
Fuel oil	390,000

Petroleum Exports

Routine trading continued in the local export market for refined products, and shipments during the week ending November 15 failed to show the expected gains in some divisions of the trade. Buying inquiry was more general, however, and it is believed by operators here that the restoration of some semblance of stability in export prices will be followed by the placing of considerable business. While present uncertain markets continue, however, it is but natural that foreign buyers should limit their purchases to actual requirements.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Nov. 15	Nov. 8	Nov. 1
Gasoline	88,000	200,000	125,000
Naphtha	350,000	430,000	360,000
Kerosene	57,000	460,000	7,000
Fuel oil	8,000	125,000	95,000
Lubricating oil	2,640,000	1,110,000	1,095,000
Petroleum, ref.	775,000	395,000	1,280,000
	Pounds		
Petrolatum			
Paraffin wax	1,680,000	2,220,000	3,780,000
Refined	675,000		
Scale	130,000	760,000	245,000
Lubricating grease	1,160,000	850,000	560,000

Recent reductions in crude oil quotations, combined with the quiet domestic demand for many refined products, has resulted in the accumulation of fairly substantial surplus holdings at refinery

(Continued on Page 130)

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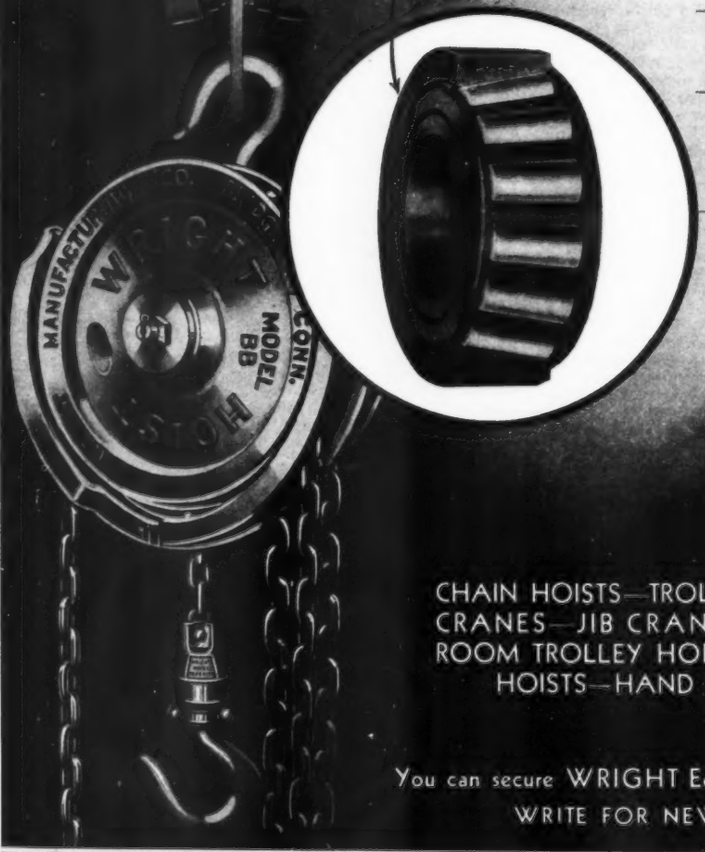

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BRIDGEPORT, CONNECTICUT.

Manufacture of Natural Gasoline

Aircraft Operation Growth Is Shown in First Half of Year

Aircraft operations, watched with interest by the natural gas industry, showed an increase of almost 5,000,000 miles in the first six months of the current year, the Department of Commerce reports, and over 1,000,000 persons rode as passengers in airplanes operated in scheduled and miscellaneous services during that period.

A study of miscellaneous flying operations, Clarence M. Young, the assistant secretary of aeronautics, stated, shows that miscellaneous operators carried 924,800 passengers. No comparison with the same period of the preceding year can be made, he added, because the aeronautics branch did not compile such information in 1929.

Passenger carrying on scheduled transport services in the first six months of this year showed a fourfold increase over the corresponding period of 1929, the department announced, and more persons traveled the scheduled air lines from January through June this year than in all of 1929.

The total number of persons carried in all operations during the first six months, the department said, is 1,133,157. The announcement follows in full:

"More than 1,000,000 persons in the United States rode as passengers in airplanes during the first six month of 1930, it was announced today by Clarence M. Young, assistant secretary of commerce for aeronautics. A study of miscellaneous flying operations just completed by the aeronautics branch of the Department of Commerce revealed that these operators carried 924,800 passengers. As scheduled air transport operators, according to a previous survey recently announced, carried 208,357 passengers during the same period, the total number of passengers carried in all types of operations from January to June, 1930, is 1,135,157.

"Aircraft engaged in miscellaneous flying, which includes such operations as experimental, exhibition, industrial, student instruction and pleasure flying, as distinguished from operations on scheduled air lines, flew 51,767,200 miles in the first six months of 1930. This was an increase of 4,767,200 miles over the corresponding period in 1929.

"As aircraft engaged in scheduled operations flew 16,902,728 miles in the first half of 1930, the total number of miles flown by American aircraft of all types of operations was 68,669,928.

"The total number of passengers carried for hire by miscellaneous operators was 716,400 from January to June, 1930. Passengers making pleasure flights, for which no fare was paid, numbered 208,400, making the total number of passengers carried in miscellaneous operations 924,800. No comparison with the first six months of 1929 with respect to passengers carried is available, as this information was not then requested of aircraft owners by the aeronautics branch."

REMODEL CALIFORNIA PLANT

The Pacific Western Oil Co. has remodeled and enlarged its natural gasoline plant in the Ventura Field of California. This plant was taken over about a year ago when the Pacific Western company purchased some of the properties of the Petroleum Securities Co.

The plant now has a production of approximately 20,000 gallons daily. Additional compressors have been installed to handle gas lift and gas sales of residue gas. The company also operates a 15,000-gallon plant in the Elwood Field of California.

LUBRICATING OIL FRACTIONS MADE BY POLYMERIZING RESIDUE GASES

Several of the larger natural gasoline manufacturers have been investigating the feasibility of utilizing the residue gas for the manufacture of motor fuels and lubricants by different processes, each of which involves polymerizing the simple molecules into heavier and more complex molecules. The U. S. Bureau of Mines is also carrying on considerable research work at its Bartlesville, Oklahoma, station in this connection as part of a program of utilizing residue gases as a base for the manufacture of valuable commodities. A paper recently presented before the Institute of Petroleum Technologists in London, England, adds much to the knowledge previously published. The paper was prepared by Professor A. W. Nash, and his associates, H. M. Stanley and A. R. Bowen of the Department of Oil Engineering and Refining at the University of Birmingham, England. The authors said:

"Ethylene has long been known to yield polymerisation products which have been described from time to time as light or heavy oils. Very little investigation has been made, however, regarding the value of the synthetic oils boiling in the lubricating range, when compared with petroleum lubricants of the same viscosity and physical characteristics. The olefine, ethylene, can be made to polymerise under such influences as: (a) ultra-violet light; (b) silent electric discharge; (c) heat; (d) pressure; (e) catalysts, or by combination of these. The oils to be described in this paper were produced by the last three of these influences."

"The oils to be described are the products of some of the experiments in which ethylene was polymerised by heating in an autoclave up to 60 atm. pressure with and without the aid of catalysts. In the absence of any catalyst, ethylene under pressure did not polymerise in the autoclave used until 325° C. This temperature was lowered by the use of zinc chloride catalysts (230-275°), while stannic chloride and titanium tetrachloride produced only negligible quantities of liquid products at temperatures up to 100°. The case of aluminum chloride as a catalyst was given the most consideration in this work on account of its pronounced action, both at ordinary temperature and at temperatures up to 180° C. At ordinary temperatures the products were of two types: (1) a free oil, and (2) a double compound of aluminum chloride and liquid hydrocarbons, from which the combined oil was extracted by decomposition, with iced water.

"The free oil consisted of liquid hydrocarbons, mostly of a saturated nature containing from about 10 to 45 carbon atoms in their molecules. The lower boiling fractions contained proportions of paraffin hydrocarbons, but the main part of the oil consisted of saturated compounds, presumably cyclo-paraffins.

"The combined oil, liberated from the pasty aluminum chloride additive compounds, also consisted of a complex mixture of hydrocarbons with from 10 to more than 50 carbon atoms per molecule. These hydrocarbons were unsaturated and are probably to be regarded as composed of hydrocarbons of the olefine series of the formula C_nH_{2n}, admixed with hydrocarbons of lower hydrogen content (probably unsaturated cyclic hydrocarbons).

"At higher temperatures the polymerisation of ethylene under pressure in the presence of aluminum chloride was much more rapid, but the life of the catalyst was considerably curtailed. As before, free oil and aluminum chloride double compounds were formed, but these differed considerably from the products obtained at lower temperatures. The aluminum chloride complex tended to become more and more carbonaceous as the temperature was increased, and above 100 to 150° C. it was not possible to obtain oil from this material at all, but only a relatively small amount of a heavy black tar.

"The free oil produced at higher temperature was a pale yellow, clear oil, containing large proportions of low-boiling constituents in contrast to the viscous free oil produced at lower temperatures. The low boiling fractions consisted of

(Continued on Page 135)

TEST VALIDITY OF TEXAS GAS CONSERVATION RULE

AUSTIN, Tex., Nov. 22.—The constitutionality of the statutes giving power to the Railroad Commission to make rules and regulations for the conservation of natural gas to be used for the manufacture of casinghead gasoline was attacked in a suit for injunction filed in the Fifty-third District Court by the T. M. Deal Oil & Gas Co. of Texas of Amarillo.

Judge George Calhoun refused to issue the injunction and passed the case until the January term. The Attorney General's department agreed that the Attorney General would not enter any suits to collect penalties pending the trial.

The suit questions the constitutionality of Article 6,008, 6,014 and 6,036, Revised Statutes, and also Railroad Commission gas conservation rules 3, 7, 15, 16, 22 and 25. It is contended that the legislature could not delegate powers to the commission which are vested in the legislature, either to make such rules or to collect penalties, and that the statute is unconstitutional which forces the sale of the gas to pipe line companies, as it creates a monopoly.

It is argued that if the law and the rules are valid, they do not apply to the gas produced by this company, which it alleges to be a sour, noncommercial gas of high sulphur content; that the conservation law protects only the sweet, marketable gas. It is contended that its well is in fact an oil well; that the oil is produced in three strata in liquid form but is vaporized when it reaches the surface, due to the gas, which thereby becomes wet and is reduced to gasoline. The contention is made that the gas residue after extracting the gasoline can be wasted as not being of value, and that it does not injure the health of the public and creates no nuisance.

The argument is made that under a supreme court decision holding that oil and gas are a content of the property, the company can sell its oil and turn loose the gas necessary to oil production.

It is further asserted if the company is denied the right to market it, it will lose it to the other concerns which are extracting gas from the same areas. Three strata are encountered by the well and the petition says the company cannot maintain separate strings of casing to each stratum. It is 2,890 feet deep and produces 80,000,000 feet of gas daily, selling 10,000,000 feet to F. C. Henderson Co., Inc., at one-fourth the gasoline recovered, making 185 bbls. of natural gasoline daily. The Henderson company is named as defendant in a plea to enjoin it from terminating its contract.

While there is but one plaintiff, a number of casinghead gas well owners are joined in the suit to test the validity of the law and the rules as well as their applicability to such production if the law is upheld. The suit has no reference to laws and rules governing the production and marketing of commercial gas or oil.

Sale of Chestnut & Smith Properties to Lone Star Forecast

Sale of the Texas properties of the Chestnut & Smith Corp. and its subsidiaries to the Lone Star Gas Corp. is forecast by the action of Thomas Chestnut, president of the former company, in calling a special meeting of stockholders to be held December 16 in the offices of the company in Tulsa to approve or disapprove the projected deal.

The Chestnut & Smith Corp. and its subsidiaries, Smith-Hanlon, Inc., Brooks & Hanlon, Inc., and the Naturaline Co. of America, will receive under the plan proposed 37,500 shares of 6 per cent cumulative preferred stock of the Lone Star Gasoline Co., which has been organized for the purpose of acquiring the Chestnut & Smith and other properties. These shares will have a par value of $100. The proposed plan comprehends the sale of these 37,500 shares, upon their receipt to the Bancamerica-Blair Corp. upon payment by that corporation of $3,125,000 and the further payment of certain liabilities of the Chestnut & Smith Corp. and its subsidiaries aggregating $250,000.

According to the call for the special meeting sent out by Mr. Chestnut, the properties involved in the proposed sale include:

"(a) All of the presently owned property (except accounts and notes receivable, trade acceptances, cash balances, guaranty deposits, prepaid insurance premiums and gasoline in storage or in transit) of Chestnut & Smith Corp., of Smith-Hanlon, Inc. (a Delaware corporation), of Brooks & Hanlon, Inc. (a Delaware corporation), and of Naturaline Co. of America (a Delaware corporation), situated in the State of Texas, and consisting generally of casinghead gasoline plants, pipe lines, rights of way and easements, gas measuring stations and appurtenant equipment, casinghead gas contracts, contracts for purchase and sale of residue gas, oil and gas leasehold estates, or interests therein, lands owned in fee, storage tanks, railway tank cars, automobiles, trucks, tractors and other automotive equipment, stores on hand, and in general and without limitation by such enumeration, all other property in said State, whether real, personal or mixed.

"(b) All property owned by Chestnut & Smith Corp., or Naturaline Co. of America, at Westwego, La.

"(c) The registered trade-mark "Naturaline."

"(d) Certain other property generally described in sale contract, including all railway tank cars, wheresoever situated."

SHACKELFORD COUNTY PLANT

FORT WORTH, Tex., Nov. 24.—The Exchange Petroleum Corp. of Wichita Falls, Tex., has purchased a 2-acre tract in the SW of Section 19, Block 11, T.&P. Survey, Shackelford County, where it will erect a gasoline plant with 8,000-gallon capacity to take care of the gas being produced in the Albany Townsite Pool. The present daily production of the pool is estimated as 450 bbls. The Texas Pipe Line Co. is taking oil from the pool.

COMPLETE GAS LINE

United Gas Co. has completed laying its 18-inch natural gas line from a connection in the Refugio Field to the Pettus Field in Bee County, Texas. The distance is 36 miles. The company has also laid 4 miles of line at Pettus to connect with the Magnolia line running from the Laredo district to San Antonio and also another 16-inch line to connect with the company's line from Kennedy to San Antonio.

Brief Items for Petroleum Refiners

SMALLER REFINERIES IN CALIFORNIA ARE ACTIVE

LOS ANGELES, Calif., Nov. 24.—There is considerable activity among the small local refineries in the state. These plants, most of which only handle a few hundred barrels of crude oil daily, usually have local outlets for their products and their market conditions are better than those of the larger companies which are actively competing in the sale of their output in both foreign and domestic markets.

At Hanford, Calif., the Kettleman Hills Gasoline Co. is constructing a skimming plant which will operate on Kettleman Hills crude oil. The town of Hanford is about 35 miles north of the field. The company has bought part of the government's royalty oil in the field paying, it is reported, $2.51 per barrel at the well. This oil is easily refined and in a straight distillation operation will give from 75 to 85 per cent gasoline. The residue is a distillate which will be suitable as tractor fuel for the ranches in the vicinity of Hanford, which is about 270 miles north of Los Angeles. The crude oil will be transported from the field to the plant by truck. The gasoline will be distributed locally. George W. Phillips is manager of the company.

At Newport Beach, Calif., the Orange County Refining Co. is repairing its plant preparatory to operation. A fourth still is being installed.

At Terra Bella in Tulare County, California, local capital is planning on installing a small skimming plant. B. F. Bond will be associated in the project.

COMPARATIVE COST OF NATURAL GAS SERVICE

A compilation of the comparative cost of natural gas to general service consumers in the 27 states having natural gas service has been made by the Montana State Public Service Commission. It is based on Rate List 8 of the American Gas Association as of January 1, 1930, according to the assistant secretary of the commission, R. F. McLaren.

(Columns show totals of cubic feet in thousands)

	1	5	100
West Virginia	$.66	$2.19	$41.51
Montana	1.84	2.49	41.43
Wyoming	1.97	2.68	46.10
North Dakota	2.00	3.55	46.50
Kentucky	.80	2.80	48.91
Colorado	1.80	4.35	45.62
Utah	2.00	4.40	48.53
Oklahoma	1.01	3.30	50.66
New Mexico	1.87	4.17	48.74
Arkansas	1.30	3.55	53.53
Washington	2.00	5.20	53.00
South Dakota	2.00	3.95	56.35
Kansas	1.26	3.72	57.39
Pennsylvania	.92	3.24	59.97
Nebraska	1.68	5.50	55.40
Missouri	1.41	4.46	58.33
Louisiana	1.81	3.80	61.96
Tennessee	1.43	4.93	61.93
Maryland	1.00	4.20	63.13
Mississippi	1.55	4.70	61.20
Ohio	1.24	3.75	65.97
Texas	1.31	3.97	67.13
Indiana	1.39	4.80	69.48
Illinois	1.43	5.13	75.26
New York	1.19	4.68	72.67
California	1.60	6.14	74.67
Michigan	1.90	7.60	139.60
	$40.36	$113.25	$1,621.02
Average	$1.49	$4.19	$60.04

MARATHON BUYS DEL RIO

Subject to the checking of titles, the Marathon Oil Co. will acquire the properties of the Three-D Products Distributors, Inc., with stations in northwestern Texas, and the Del Rio Refining Co., with a plant located in Del Rio, Tex. In addition, the stations of the Eagle Distributing Co. are being considered, which in all will raise the total number of new outlets for the Marathon company to 125. The Del Rio plant has a crude capacity of 5,000 bbls. and has operated continuously since its completion in January, 1929.

BIG REFINERY FOR MEXICO

MEXICO CITY, Nov. 24.—Permission has been granted by the ministry of industry of commerce to the Aguila Oil Co., British-owned, for the construction of an immense refinery just outside Mexico City. The refinery will be the terminal for a large pipe line now in course of construction by the Aguila company for transporting petroleum from Palma Sola, near the Pacific Coast, to this capital. The plant will have a capacity for the treatment of 12,000 cubic meters daily and will be the first structure of its kind in Mexico City. Official figures for Mexican oil production in the first eight months of this year lists a total of 27,322,890 bbls., valued at 55,717,467 pesos (about $25,430,055), against the production of 28,946,707 bbls., valued at 60,040,628 pesos (about $27,618,688), in the same period of last year.

ENLARGING MUSKEGON PLANT

Successors to the Muskegon Refiners, Inc., who are rehabilitating and enlarging a 500-bbl. skimming plant erected in the Muskegon oil field about 18 months ago but never operated, have filed articles of association as the Naph-Sol Refining Co., a Michigan corporation of North Muskegon. Officers of the company are: President, Walter E. Anderson, former president and general manager of the Old Dutch Refining Co.; vice president, John E. Helme, former assistant superintendent at the Old Dutch company's Muskegon plant, and secretary-treasurer, A. W. Penny, Muskegon attorney. Workmen are enlarging the plant which is in Section 8, Muskegon Township, at the junction of the Pere Marquette Railroad tracks and M-20 paved highway through the oil field. The plant will be ready for operation about January 1, 1931, for the manufacture of naphthas and naphtha solvents.

RESIGN TO ORGANIZE COMPANY

SHREVEPORT, La., Nov. 24.—Sylvester Dayson, vice president, and F. C. Winters, chairman of the board, of the Lion Oil Refining Co. of El Dorado, Ark., have resigned to enter the refinery business with an organization of their own. The resignations are effective December 1. The Dayson Petroleum Co., with these two as the principal figures, is in process of organization. It is planned to build a plant with 300 bbls. daily crude capacity in or near Smackover to run heavy oil from that pool. Products in which the company will be particularly interested are lub oils, naphtha, road oils and asphalt. Mr. Dayson became vice president of the Lion company when Col. T. H. Barton became president, prior to that having been in charge of refinery operations for several years.

BLAUSTEINS ACQUIRE CONTROL

The Blaustein interests have acquired control in the Crown Central Petroleum Corp., which directly or through subsidiaries owns a refining unit of 10,000 bbls. per day capacity on the Houston ship channel in Houston, Tex., where it operates a deepwater terminal. It also has producing properties and gathering pipe line system. Crown in the past has not sold its products direct to consumers through tank wagons or service stations, but instead has confined its sales operation to deliveries by tank car and cargo to the jobbing trade in the United States and to tanker deliveries into foreign countries. W. A. Williams, president of the Crown Central Petroleum Corp., will continue with the company in the same capacity, with Louis Blaustein chairman of the board.

HAVENS JOINS VACUUM STAFF

Beckwith Havens, lieutenant commander, Naval Aviation Reserve, oldest living flyer in the United States Navy and the first pilot to carry authentic air mail in the United States, has been appointed to the special representatives' department of the Vacuum Oil Co. Mr. Havens in 1911 was a member of the famous Curtiss exhibition team and flew the first airplane over Havana, Cuba. In 1913 he won the Aero Club of America medal of merit for the outstanding flight of the year—a hydroplane flight from Detroit to New York. After a few years in the Far East, Mr. Havens returned to the United States in 1917 and joined the Naval Aviation Reserve.

KENDALL BUYS PROPERTY

BRADFORD, Pa., Nov. 24.—The Kendall Refining Co. has purchased from the South Penn Oil Co. a property that formerly was owned by the Emery Manufacturing Co. and the site of the old Emery refinery. The property consists of 8.8 acres of ground including everything northeast of Mill Street and lying between the Erie Railroad right of way, the Tuna Creek and the Baltimore, Rochester & Pittsburgh right of way. The purchase also includes all tankage and buildings on the property, but not the mineral right, which is held by Emery and Mason. The Kendall Refining Co purchased the property for future refinery expansion.

GASOLINE SALES AGAIN RISE

NEW YORK, Nov. 25.—Sales of tax-paid gasoline in New York State for September amounted to 139.230,719 gallons, an increase of 13,400,000 gallons, or approximately 10 per cent, over the sales of 125,829,872 gallons similarly reported in September, 1929.

Sales of tax-paid motor fuel in New York State in August this year totaled 154,234,769 gallons, the record total reported for any one month since the state gasoline tax law became effective. In August, 1929, the sales of tax-paid motor fuel in the state were 147,088,566 gallons.

Although September sales this year fell off by about 15,000,000 gallons from peak sales in August, the decline was much less than in September, 1929, when the month's sales recorded a drop of approximately 21,250,000 gallons under those of the preceding month.

GASOLINE TAX IN INDIANA

Official reports show that 42,647,335 gallons of gasoline subject to tax were sold in Indiana in September, an increase of 2,102,454 gallons over the sales in the corresponding months of 1929. How much of the increase represents actual gain in consumption and how much is accounted for by the payment of the tax by former tax evaders is a question. As usual, the Standard Oil Co. (Indiana) led with a total of 12,878,496 gallons. The Shell Petroleum Corp. was the second with 4,014,075 gallons. The Indian Refining Co. came third with 2,970,216 gallons and the Sinclair Refining Co. was fourth with 2,465,565 gallons.

LARGER GASOLINE TAX SEEN

WASHINGTON, D. C., Nov. 24.—The Bureau of Public Roads in estimating gasoline taxes for 1930 has estimated a consumption of 15,400,000,000 gallons of taxable gasoline against a consumption of 14,221,016,279 gallons for 1929, according to the Department of Agriculture. During the first six months of 1930 a total of 6,809,863,076 gallons was consumed on which a tax was paid against 6,291,710,983 gallons during the first six months of 1929.

INDEPENDENTS PLAN TO OPERATE OWN REFINERY

The co-operative effort of independent operators in Montana to refine and sell production is being followed with interest. The Montana Producers' Purchasing Co., formed by the independents, has for its objective the refining and selling of all the crude produced by independents in the State. The plan will be made immediately effective through utilization of the refinery, pipe lines and storage tanks of the Shelby Pipe Line Co. in the Kevin-Sunburst Field.

All crude now stored by independents, as well as in future production, is to be run through the Shelby plant. Gasoline not immediately sold will be stored in preparation for a statewide sales campaign. A contract has been signed for the sale of all fuel oil to the Great Northern Railway.

The plan will effect a large saving in storage alone, since it will cost much less to store the refined product, gasoline, than it now costs to store the crude. Capacity of the Shelby plant is 2,000 bbls. daily, sufficient to supply the sales needs of the organization.

Leading independents comprise the board of directors of the Montana Producers' Purchasing Co. as follows: L. R. Hannah of the Hannah-Porter and Cosmos Petroleum Cos.; A. E. Eichorn of the "56" Petroleum Corp.; M. E. Porter of the Hannah-Porter Co.; J. H. Thelen, Great Falls attorney, representing the Fedig interests; J. A. Johnson, independent producer and refiner, and P. Q. Malan of the Ogden-Kevin Syndicate. independent operators.

CONTINENTAL BUYS REFINERY

PONCA CITY, Okla., Nov. 24.—Purchase of the Albuquerque refinery of the Gilliland Oil Co. of New Mexico is announced by Walter Miller, vice president in charge of manufacturing for the Continental Oil Co. The new Continental manufacturing unit will make it possible to serve New Mexico customers in a more economical and efficient manner. It has an average crude capacity of 1,000 bbls. a day and is equipped for the manufacture of gasoline, fuel oil and stove distillate. The Albuquerque refinery is the tenth to be controlled and operated by Continental and the third in New Mexico, the two others being in Artesia and Farmington.

TICHENOR JOINS WHITE OAK

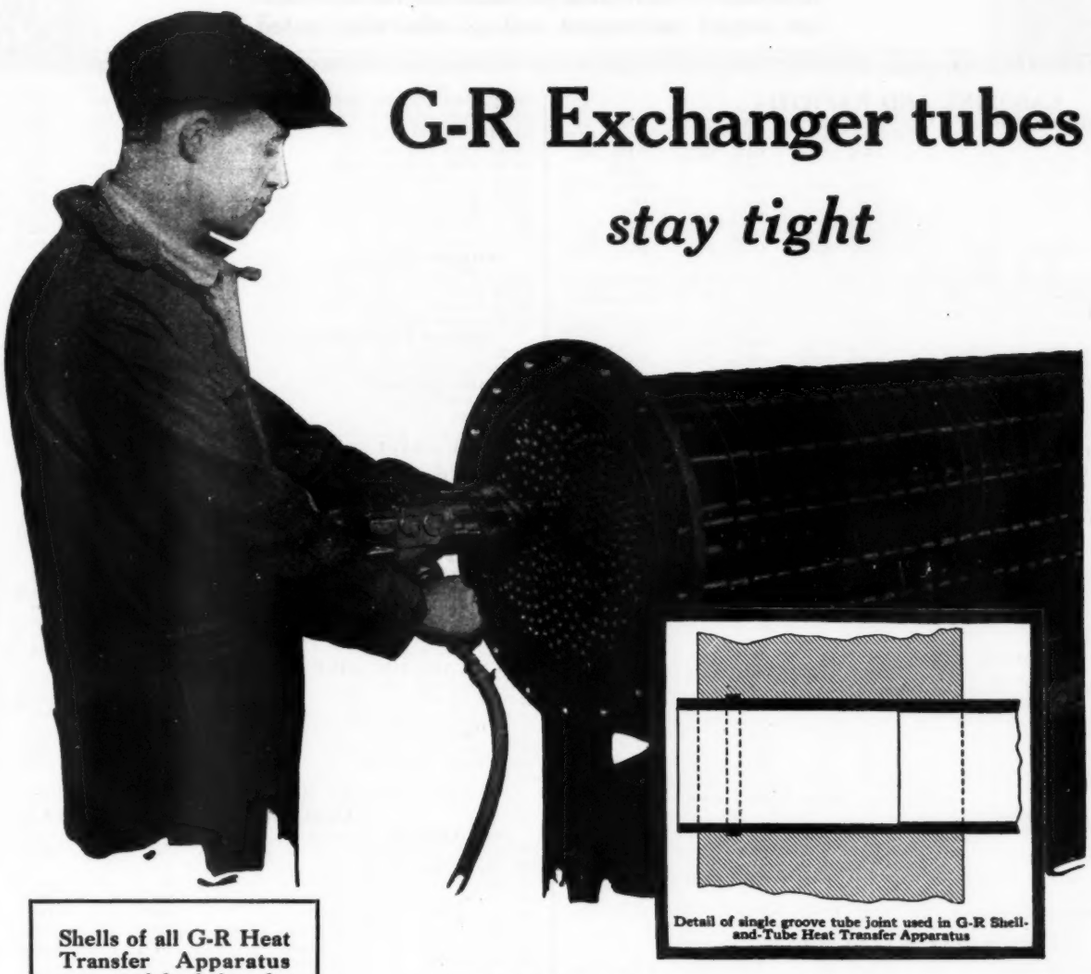
N. B. Tichenor has joined the White Oak Refining Co. at its Chicago office and will handle sales of lubricating oils. Mr. Tichenor formerly was with the H. B. Dunn Co., specializing in lub oils and went to that concern from the Shell's lubricating division. He will be succeeded in the Dunn organization by J. E. Messler, formerly with the Crown Central Refining Co., in charge of the Chicago office and for the last few months in charge of tank car sales of lubricating oils for the Indian Refining Co. The H. P. Dunn Co. has arranged with the Macmillan Petroleum Corp. to sell the lub output of the new refinery near El Dorado, Ark.

THIRD NO-ACCIDENT MONTH

NEW YORK, Nov. 24.—The Bayonne refinery of the Tide Water Oil Co. for the third time this year turned in for October a no-lost-time-accident month. October was the first month in a three-month interplant safety contest being conducted by the New Jersey State Department of Labor, which will award prizes to the companies with the best safety records in their respective sections.

G-R Exchanger tubes

stay tight



Detail of single groove tube joint used in G-R Shell-and-Tube Heat Transfer Apparatus

Shells of all G-R Heat Transfer Apparatus are welded by the G-WELD Process.

TUBES of all G-R Shell-and-Tube Heat Transfer Apparatus are roller expanded into the tube plates. As a further provision against the possibility of leakage, the tube holes in the plates are grooved and the expanding process forces the tube metal into these grooves, securely anchoring the tube ends.

This double protection against leakage is one of the many features of G-R Equipment that assure trouble-proof service. In hundreds of refineries, natural gasoline plants, and pipe line pumping stations, G-R Condensers, Coolers, Heaters and Heat Exchangers are giving thorough satisfaction and materially helping to maintain maximum plant efficiency.

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Heat Transfer Apparatus

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Nov. 25		Nov. 18		Nov. 11	
50-52 450 endpoint	.04½	.04¾	.04¾	.05	.05	.05¼
56-58 450 endpoint	.04½		.04⅝	.04¾	.04¾	.05
*58-60 437 endpo.nt (U. S. Motor)	.0513		.0515		.0530	
*60-62 437 endpoint	†.04¾	.05¼	†.05¼		†.05¼	.05½
*60-62 400 endpoint	.055		.0525		.06	
*64-66 375 endpoint	†.05¼	.05¾	†.05½	.06	.0675	
68-70 360 endpoint	.05¾		.05¾		.05¾	.06
64-66 437 endpoint (blend)	.04¾	.05¼	.04¾	.05¼	.05	.05¼
NORTH TEXAS—						
50-52 450 endpoint	.04½		.04¾	.05	.05	.05¼
58-60 450 endpoint	.04¼	.04¾	.04¾	.05	.04¾	.05
58-60 437 endpoint (U. S. Motor)	.04½	.04¾	.04¾	.05¼	.04⅞	.05¼
60-62 400 endpoint	.04¾	.05	.05¼		.05¼	.05½
64-66 390 endpoint	.04⅞	.05	.05¼	.05½	.05⅝	.05¾
64-66 375 endpoint	.05¼	.05½	.05½	.05¾	.05½	.05¾
68-70 360 endpoint	.06		.06		.06	
64-66 437 endpoint (blend)	.04¾		.04¾	.05¼	.05	.05¼
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06¼	.06½
*ARKANSASA—						
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06¼	.06½
PENNSYLVANIA—						
52-54 Naphtha	.06¾		.06¾		.06¾	
54-56 Naphtha	.06¾		.06¾		.06¾	
58-60 Gasoline	.06¾		.06¾		.06¾	
60 Gasoline	.06¾	.07	.06¾	.07	.06¾	.07
62 Gasoline	.07		.07		.07	
64 Gasoline	.07½		.07½		.07½	
68-70 350 endpoint gasoline	.08½		.08½		.08½	
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.08	.11	.08	.11	.08	.11
†58-62 400 endpoint domestic gasoline	.09½	.11½	.09½	.11½	.09½	.11½
*CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.04½	.04¾	.04½	.04¾	.04¾	
56-58 450 endpoint	.04½	.04¾	.04½	.04¾	.04⅝	.05
58-60 437 endpoint (U. S. Motor)	.04½	.05	.04½	.05	.04¾	.05¼
60-62 400 endpoint	.04¾	.05¼	.04¾	.05½	.05	.05½
64-66 375 endpoint	.05¼	.05¾	.05¼	.05¾	.05½	.06
64-66 437 endpoint (blend)	.04⅝	.05	.04⅝	.05	.04¾	.05¼
68-70 360 endpoint	.06	.06¼	.06	.06¼	.06	.06¼
GULF COAST (Export)—						
58-60 U. S. Motor	.05½	.06	.05¾	.06¼	.06	.06½
60-62 400 endpoint	.06	.06¾	.06¼	.07	.06¼	.07
61-63 390 endpoint	.06¼	.07	.06½	.07¼	.06½	.07¼
64-66 375 endpoint	.06⅝	.06¾	.06¾	.07⅜	.06⅞	.07½

*Weighted average prices November 24, 17 and 10 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Nov. 25		Nov. 18		Nov. 11	
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04⅝	.04¾	.04½	.04¾
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04⅜	.04½	.04½		.04½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04		.04⅜	.04½	.04½	
Grade C, 80-92. 375 e.p., rec. 78%	.04		.04⅜		.04½	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝		.04⅝	.04¾	.04½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½		.04½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04		.04⅜		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04		.04⅜		.04½	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.04¾		.04¾		.04½	.04¾
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅛		.04½		.04½	
Grade C, 80-92. 375 e.p., rec. 78%	.04		.04½		.04½	
CALIFORNIA—						
75-78 375-390 endpoint	.06¾	.07¾	.07	.08	.07	.09
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04⅝	.04¾	.04½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04⅜		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04		.04⅝		.04½	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

BURNING OIL

OKLAHOMA (Group 3)—	Nov. 25		Nov. 18		Nov. 11	
41-43 water white kerosene	.03⅛	.03¾	.03⅛	.03¾	.03⅛	.03¾
42-44 water white kerosene	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
NORTH TEXAS—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
40-41 water white kerosene	.02⅞	.03	.02⅞	.03	.02⅞	.03
*NORTH LOUISIANA—						
41-43 water white kerosene	.04¼	.04⅜	.04¼		.04	.04¼
*ARKANSAS—						
41-43 water white kerosene	.04¼		.04¼		.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.04⅞		.04¾		.04¾	
45 Kerosene water white	.05	.05¼	.04⅞	.05⅛	.04⅞	.05⅛
46 Kerosene water white	.05¼	.05½	.05¼	.05½	.05	.05¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.06	.05	.06	.05	.06
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
42-44 water white kerosene	.03¼	.03½	.03¼	.03½	.03¼	.03½
GULF COAST (Export)—						
41-43 prime white	.04½	.04¾	.04½	.04¾	.04½	.04¾
41-43 water white	.05½	.05¾	.05½	.05¾	.05½	.05¾

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Nov. 25		Nov. 18		Nov. 11	
Below 18 gravity Fuel Oil, per bbl.	.40	.45	.40	.45	.45	.50
18-22 Fuel Oil, per bbl.	.50	.55	.50	.55	.50	.55
20-22 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
22-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
26-30 Fuel Oil, per bbl.	.70	.75	.70	.75	.70	.75
28-30 Fuel Oil, per bbl.	.80	.90	.80	.90	.80	.90
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color, high cold test)	.02¼	.02½	.02¼	.02½	.02¼	.02½
32-36 Gas Oil (straw color, low cold test)	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞
36-38 Distillate	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
38-40 Straw Distillate	.02¾	.03¼	.02¾	.03¼	.02¾	.03¼
NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
24-26 Fuel Oil, per bbl.	.55	.65	.55	.65	.55	.65
32-36 Gas Oil (industrial)	.02	.02¼	.02	.02¼	.02	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.80	.85	.80	.85	.75	.85
30-32 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
*ARKANSAS—						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
16-22 Refinery Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
GULF COAST (South Texas)—						
Gas Oil	.03¾		.03¾		.03¾	
Bunker C Fuel (cargo lots), per bbl.	.65	.67½	.65	.67½	.65	.67½
Bunker C Fuel (small lots)	.90		.90		1.00	
PENNSYLVANIA—						
30-34 Fuel Oil	.03½		.03¾		.03¾	
36-40 Fuel Oil	.03½		.03¾		.03¾	
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.60	.95	.60	.95	.60	.95
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.55	.85	.55	.85	.55	.85
15-19 Fuel Oil, f.o.b. tank cars	.40	.85	.45	.85		
27 plus Diesel, per bbl.	.85	1.05	.85	1.05	.85	1.00
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.57½	.62½	.57½	.65	.57½	.65
22-26 Fuel Oil, per bbl.	.62½	.70	.62½	.67½	.65	.70
28-30 Fuel Oil, per bbl. (zero)	.90	.95	.90	.95	.90	.95
32-36 Gas Oil (zero)	.02¼	.03⅜	.02½	.02⅞	.02½	.02⅞
32-36 Gas Oil (industrial)	.02½	.02⅞	.02¼	.02⅜	.02⅛	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Nov. 25		Nov. 18		Nov. 11	
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.06	.06¼
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.05¾	.06
150 vis., 3 color, 20-25 cold test	.07		.07		.07	
150 vis., 4 color, 20-25 cold test	.06½		.06½		.06½	
180 vis., 3 color, 23-28 cold test	.08½		.08½		.08½	
180 vis., 4 color, 23-28 cold test	.08		.08		.08	
180 vis., 5 color, 23-28 cold test	.07½	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09½		.09½		.09½	
200 vis., 5 color, 23-28 cold test	.09		.09		.09	
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13¾
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
280 vis., 3 color, 25-30 cold test	.15½		.15½		.15½	
280 vis., 4 color, 25-30 cold test	.14½		.14½		.14½	
280 vis., 5 color, 25-30 cold test	.13½		.13½		.13½	
Cylinder Stocks:						
600, steam refined, light green	.07	.08	.07	.08	.07	.08
600, steam refined, dark green	.04½	.05½	.04½	.05½	.04½	.05½
190-200 vis., D color, Bright Stocks	.25		.25		.26	
150-160 vis., D color, Bright Stocks 0-10 C.T.	.20	.21	.20	.21	.21	.22
150-160 vis., D color, Bright Stocks 10-25 C.T.	.19	.20	.19	.20	.20	.21
150-160 vis., D color, Bright Stocks 25-40 C.T.	.18½	.19½	.18½	.19½	.19½	.20½
150-160 vis., E color, Bright Stocks	.18	.19	.18	.19	.19	.20
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.02	.02⅛

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½	.06½	.05½	.06½	.05½	.06½
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05¾		.05¾		.05¾	
150, 3 color	.10¾	.12¼	.10¾	.12¼	.11	.12½
180, 3 color	.15	.16	.15	.16	.15½	.16½
200, 3 color	.17	.17½	.17	.17½	.17	.17½
220, 3 color	.21	.22	.21	.22	.21	.22
600, steam refined	.09½	.10½	.09½	.10½	.09¾	.10¾
†635, steam refined	.15	.16	.15	.16	.15½	.16½
†650, steam refined	.16	.17	.16	.17	.16	.17
600, Pennsylvania Flash	.15½	.16½	.15½	.16½	.16	.17
630, Pennsylvania Flash	.23½	.24½	.23½	.24½	.24	.25
600, E filtered	.15	.17	.15	.17	.15	.17
600, D filtered	.19	.22	.19	.22	.18	.21
Pennsylvania Bright Stocks below 35 C.T.	.21		.21		.21	.22
Pennsylvania Bright Stocks above 35 C.T.	.19	.20	.19	.20		
*122-124 White Crude Scale Wax	.02¼		.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	

*At New York. †Prices corrected for November 11.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06¼	.06½	.06¼	.06½	.06¼	.06½
200 vis., 3 color, pale oil	.08½	.09	.08½	.09	.08½	.09
300 vis., 3 color, pale oil	.09¾	.10	.09¾	.10	.09¾	.10
500 vis., 3½ color, pale oil	.11	.11¼	.11	.11¼	.11	.11¼
750 vis., 3½ color, pale oil	.12½	.12¾	.12½	.12¾	.12½	.12¾
1,200 vis., 3½ color, pale oil	.15	.15¼	.15	.15¼	.15	.15¼
2,000 vis., 4 color, pale oil	.16	.16½	.16	.16½	.16	.16½
200 vis., 5-6 color, red oil	.07¾	.08	.07¾	.08	.07¾	.08
300 vis., 5-6 color, red oil	.09	.09¼	.09	.09¼	.09	.09¼
500 vis., 5-6 color, red oil	.10¼	.10½	.10¼	.10½	.10¼	.10½

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

750 vis., 5-6 color, red oil	.11¾	.12	.11¾	.12	.11¾	.12
1,200 vis., 5-6 color, red oil	.14	.14½	.14	.14½	.14	.14½
2,000 vis., 6 plus color, red oil	.16	.16¼	.16	.16¼	.16	.16¼
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 5-6 color	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
400 vis., 5-6 color	.12	.12½	.12	.12½	.12	.12½
500 vis., 4½-5 color	.13	.13½	.13	.13½	.13	.13½
500 vis., 5-6½ color	.13	.13¾	.13	.13¾	.13	.13¾
600 vis., 6½ plus color	.13½	.14½	.13½	.14½	.13½	.14½

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Nov. 25		Nov. 18		Nov. 11	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.06¾	.07	.06¾	.07	.06¾	.07
Kerosene, water white, 41-43	.06	.06½	.06¼	.06¾	.06¾	
*Fuel Oil, Bunker "C," 41-43	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 28 gravity plus	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.04½		.04½		.04½	
Refined Wax:						
120-122 a.m.p., per lb.	.02⅞		.02⅞		.02⅞	
125-127 a.m.p., per lb.	.03⅛		.03⅛		.03⅛	
130-132 a.m.p., per lb.	.03½		.03½		.03½	
133-135 a.m.p., per lb.	.04⅛		.04⅛		.04¼	
135-137 a.m.p., per lb.	.04⅜		.04⅜		.04½	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03⅜	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06¾	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents per barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	Nov. 25	Nov. 18	Nov. 11
600, steam refined cylinder stocks, in bbls.	.16½	.17	.17
635, steam refined	.18½	.19	.19
650, steam refined	.23	.23½	.23½
600, Pennsylvania Flash	.23½	.24	.24
630, Pennsylvania Flash	.29½	.30	.30
600, Warren E	.23½	.24	.24
600, Oil City E	.22½	.23	.23
Light 140-150 Bright Stocks	.27	.29	.29
Dark 140-150 Bright Stocks	.25	.27	.27

LOS ANGELES EXPORT PRICES

	Nov. 25		Nov. 18		Nov. 11	
Kerosene, water white	.04¾	.06	.04¾	.06	.04¾	.06
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06½	.07½	.06½	.07½	.06½	.07½
*60-62, 400 endpoint gasoline	.08	.09¼	.08	.09¼	.08	.09¼

*For coastwise and off-shore shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (Oct. 28) ..... $ .75
Other fields ..... See gravity table

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* ..... Same as North Texas
Crane-Upton-Crockett, Howard and Glasscock, Mitchell and Ector .....
..... See gravity table, Column 3
Pecos and Winkler .....
..... See gravity table, Column 9
Chalk† (April 10, 1930) ..... $ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover (all grades) (Oct. 30, 1930) .. $ .70
Carterville, Sarepta and Cotton Valley, below 36 gravity ..... See gravity table
Bellevue (Oct. 30, 1930) 1.00
Urania (Oct. 30, 1930) ..... .75
Calion, heavy (Oct. 30, 1930) ..... .70
East El Dorado (Oct. 30, 1930) ..... .70
Other fields ..... See gravity table

Note—Smackover and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Gulf Refining Co. and Magnolia Petroleum Co. Calion posted by Gulf Refining Co.

GULF COAST

Grade A (Oct. 28, 1930)* $1.00
Grade B, 25° and upward ... See gravity table
Jennings, La. (Oct. 30, 1930)† ..... .80
Refugio (light) ..... Same as Grade B
Refugio (heavy) (Oct. 28, 1930)* ..... .75
Markham (Oct. 28)‡ ..... .85
High Island (Oct. 30, 1930)† ..... .75

*Humble Oil & Refining Co. †Gulf Refining Co. of Louisiana. ‡Texas Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.

Iles (Feb. 15, 1930) ..... $ .87
33 gravity and above ..... .87
Under 33 gravity ..... .65
Dutton Creek (Oct. 28, 1930) 1.01
Rock Creek, Wyo. (Oct. 28, 1930) 1.01
Salt Creek ..... See gravity table
Big Muddy (Oct. 28, 1930) 1.00
Grass Creek, heavy (July 27, 1928) ..... .90
Grass Creek, light (Oct. 28, 1930) 1.25
Mule Creek (May 21, 1929) 1.20
Elk Basin (Oct. 28, 1930) 1.25
Lance Creek (Oct. 28, 1930) 1.32
Poison Spider (Mar. 14, 1927) 1.00
Notches (Mar. 14, 1927) ..... .65
Rex Lake (Feb. 22) 1.10
Osage (Nov. 1, 1930) ..... .85
Lost Soldier (Oct. 28) ..... .80
Hamilton Dome (Mar. 14, 1927) ..... .85
Greybull (Oct. 28, 1930) 1.25
Torchlight (Oct. 28, 1930) 1.25
Cat Creek (Oct. 28, 1930) 1.25
Pondera (Montana) (Oct. 28, 1930) 1.45
Sunburst (Montana) (Oct. 28, 1930) 1.55
Hogback (Feb. 15, 1930) 1.40
Artesia (New Mexico) (Oct. 28, 1930) ..... .75
Lea County ..... See gravity table
Border, Mont. 1.55
Red Coulee, Alberta 1.55

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia posted by Ohio Oil Co. and Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co.

(Continued on Page 126)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Oklahoma-Kansas N. C. Texas	2 North La.-Ark.	3 Crane, Upton, Ector, Howard, Crockett, & Mitchell, West Texas) (Ark. N. M.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Pecos-Winkler (West Texas)	10 Grade B Gulf Coast and Refugio, Texas
Below 25	....	....	.50	....	....	....	....	....	.55	.75
25 to 25.9	....	....	.52	....	....	....	....	....	.57	.92
26 to 26.9	....	....	.54	....	....	....	....	....	.59	.94
27 to 27.9	....	....	.56	....	....	....	....	....	.61	.96
28 to 28.9	....	....	.58	....	....	....	....	....	.63	.98
Below 29	.65	.65	....	....	.50	.45	....	.54	....	....
29 to 29.9	.69	.69	.60	....	.54	.49	.69	.58	.65	1.00
30 to 30.9	.73	.73	.62	....	.58	.53	.73	.62	.67	1.02
31 to 31.9	.77	.77	.64	....	.62	.57	.77	66	.69	1.04
32 to 32.9	.81	.81	.66	....	.66	.61	.81	70	.71	1.06
33 to 33.9	.85	.85	.68	....	.70	.65	.85	....	.73	1.08
34 to 34.9	.89	.89	.70	....	.74	.69	.89	..	.75	1.10
35 to 35.9	.92	.92	.72	....	.77	.72	.92	....	.77	1.12
36 to 36.9	.95	.95	.74	....	.80	.75	.95	....	79	1.14
37 to 37.9	.98	.98	....	....	.83	.78	.98	....	..	1.16
38 to 38.9	1.01	1.01	....	....	.86	.81	....	....	..	1.18
39 to 39.9	1.04	1.04	....	....	.89	.84	....	....	....	1.20
40 and above	1.07	1.07	....	....	.92	.87	....	....	....	1.22

Column 1—Carter Oil Co. posted above prices for Oklahoma and Kansas on October 28. Humble Oil & Refining Co. posted same for North Central Texas on October 28. Magnolia Petroleum Co. posted same for Kansas, Oklahoma and North Central Texas on October 27 from 29 degrees upward, but posted below 26 degrees at 53 cents; 26-26.9 degrees at 57 cents; 27-27.9 degrees at 61 cents; 28-28.9 degrees at 65 cents. Stanolind Crude Oil Purchasing Co. on November 1 adopted the schedule as listed in table; Prairie Oil & Gas Co. adopted the same on November 1, other companies following. North Central Texas, for the purpose of this table, includes North Texas, Ranger district, Mexia, Powell, Richland, Wortham, Van, Lytton Springs, Currie, Nocona, Moran and Corsicana (light oil).

Column 2—The Texas Company posted above prices on Caddo and Red River Crude, up to 39-39.9 degrees. It also posted 40-40.9 degrees at $1.07; 41-41.9 degrees at $1.10; 42-42.9 degrees at $1.13; 44-44.9 degrees at $1.16, and 44 degrees and above $1.19. Standard Oil Co. posted schedule as listed in table on October 30; Magnolia Petroleum Co. on October 30 posted prices as listed, starting at 29 degrees, but posted below 26 degrees, 53 cents; 26-26.9 degrees, 57 cents; 27-27.9 degrees, 61 cents; 28-28.9 degrees, 65 cents. Louisiana Oil Refining Co. adopted Standard of Louisiana prices on October 30. North Louisiana and Arkansas fields included in table are Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer, Cotton Valley, Sarepta-Carterville, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. on October 28.

Column 4—Companies quit posting but crude takes present Hutchinson-Carson prices.

Column 5—Humble Oil & Refining Co., Magnolia and Prairie, October 28. Prairie ceased posting and purchasing in all Panhandle fields November 27.

Column 6—Humble Oil & Refining Co., October 28.

Column 7—Midwest Refining Co. on October 28. All crude over 37 degrees 98 cents.

Column 8—Louisiana Oil & Refining Co. and Atlantic Oil Producing Co., October 30.

Column 9—Humble Oil & Refining Co., October 28.

Column 10—Humble Oil & Refining Co., October 28. On October 30, Gulf Refining Co. of Louisiana and Gulf Pipe Line Co. of Texas posted as follows for Grade B: Below 25 degrees, 69 cents; 25-25.9 degrees, 71 cents, with a 2-cent differential for each degree upward to and including 40 degrees and above at $1.01. The Texas Company adopted above schedule November 1.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co. (effective September 15, 1930), Union Oil Co. (effective September 15, 1930)

Gravity—	1 Long Beach, Seal Beach, Alamitos Hts., Huntington Beach, Inglewood, Torrance, Richfield, Olinda, Brea Canyon	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs	6 Santa Maria, Coalinga	7 Wheeler Ridge	8 Orcutt, Ventura, Rincon	9 Ventura Avenue	10 Elwood Terrace	11 Athens, Rosecrans, Dominguez
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1.07	1.04	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.12	1.08	1.06	1.08	1.05	1.04	1.04	1.08	1.05	....	1.12
25 to 25.9	1.17	1.12	1.10	1.11	1.09	1.06	1.06	1.11	1.10	....	1.17
26 to 26.9	1.22	1.16	1.14	1.15	1.13	1.08	1.08	1.15	1.15	....	1.22
27 to 27.9	1.26	1.21	1.18	1.19	1.18	1.11	1.10	....	1.19	....	1.27
28 to 28.9	1.30	1.25	1.23	1.23	1.23	1.15	....	....	1.23	....	1.32
29 to 29.9	1.34	1.29	1.29	1.26	1.28	1.19	....	....	1.27	....	1.37
30 to 30.9	1.38	1.33	1.35	1.29	1.33	1.23	....	....	1.31	....	1.42
31 to 31.9	1.43	....	1.40	....	1.38	1.27	....	....	1.36	....	1.47
32 to 32.9	1.48	....	1.47	....	1.43	1.31	....	....	1.41	....	1.52
33 to 33.9	....	....	1.53	....	1.48	1.35	....	....	1.47	....	1.57
34 to 34.9	....	....	1.59	....	1.53	1.39	....	....	1.53	1.32	1.62
35 to 35.9	....	....	1.65	....	1.58	1.43	....	....	1.59	1.39	1.66
36 to 36.9	....	....	....	....	1.63	....	....	....	....	1.46	1.72
37 to 37.9	....	....	....	....	1.68	....	....	....	....	1.53	1.78
38 to 38.9	....	....	....	....	1.73	....	....	....	....	1.60	1.84
39 to 39.9	....	....	....	....	1.78	....	....	....	....	1.66	1.90
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	1.96
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.02
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.08

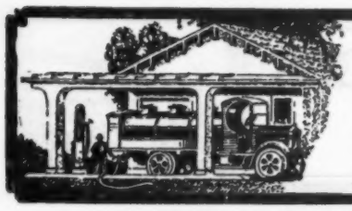
Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11 the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents. Fruitvale, posted by General Petroleum Co., 11-13.9, 50 cents; 14 gravity and above, 55 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

(Continued on Page 131)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Nov. 25

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Chicago†	16 0	17.0	3.0	11.0
Decatur, Ill.	13.0	16.0	3.0	11.0
E. St. Louis	15.7	14.7	3.0	10.2
Joliet	16.4	17.4	3.0	11.0
Peoria	15 0	14.0	3.0	11.0
Quincy	16.2	17.2	3.0	10 8
Davenport, Ia.	16.5	16 5	3.0	11 03
Des Moines	15 5	16 5	3.0	11.3
Keokuk	16.5	17 5	3.0	11 3
Sioux City	16 1	14.9	3.0	10.9
Duluth, Minn.	17 5	16.4	3.0	13 9
Mankato	14 0	14.0	3 0	11.7
Minneapolis	17.0	17.0	3 0	11.9
La Crosse, Wis.	16.2	17.2	2.0	12.0
Milwaukee	16.1	15 0	2 0	10.9
Madison	15.3	15 3	2.0	11.1
Detroit, Mich.	13 3	12.5	3 0	12.7
Grand Rapids	15 7	16.7	3.0	12 6
Saginaw	14.3	16.9	3.0	12 8
Evansville, Ind.	17 1	18.1	4 0	11 9
Indianapolis	16.9	17.9	4.0	12 1
South Bend	17.4	18 4	4.0	12 2
Fargo, N. D.	18 9	19.9	3.0	13 9
Huron, S. D.	17.5	17.5	4.0	12 7
Sioux Falls	17.8	14 9	4 0	13 4
K. C., Mo.	14.9	15.9	3 0	9.6
Springfield*	16.9	16 9	3 0	10.5
St. Louis*	12.9	13 0	2 5	10 2
St. Joseph	15.5	11.9	2.0	10 1
Wichita, Kans.	14 8	13 8	3.0	9 8
Bartlesville, Ok.	15.5	18.5	4.0	9.5

*State tax 2 cents; remainder city tax.

†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

Effective August 5, the following quantity discounts from the service station prices are allowed on monthly sales of gasoline; 500 gallons or more, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Denver, Colo.	16 0	19 0	4.0	13 5
Pueblo	17.0	20.0	4 0	13.5
Grand Junction	18 0	21 0	4.0	17.0
Casper, Wyo.	17 0	20.0	4.0	12 0
Cheyenne	18.0	21 0	4 0	13 5
Butte, Mont.	19.0	22 0	5 0	18.0
Billings	20.0	23.0	5 0	16.5
Great Falls	20.0	23 0	5 0	18 0
Helena	23.5	25 5	5.0	18 0
Salt Lake, Utah	20.0	23 0	3.5	17.0
Albu'que, N. M.	16 0	18.0	5.0	15 0
Boise, Idaho	23.5	26.5	5 0	19 0
Twin Falls	23.5	27.5	5.0	19.0

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	14.0	17 0	4.0	11 0
Fort Worth	14 0	17.0	4.0	10 0
Houston	15.0	19.0	4 0	11.0
San Antonio	15.0	17 0	4 0	11 0
El Paso	16 0	20 0	4.0	13 0
Texarkana	17.0	17 0	4 0	12.0
Muskogee*	15.0	18 0	4.0	9.0
Okla. City*	13 0	16.0	4.0	10 0
Tulsa	14 0	18 0	4 0	10.0
Ft. Smith, Ark.	14.5	15 5	5 0	12.0
Little Rock	13.0	14.0	5.0	12.0

*Gasoline tank wagon price to dealers 1 cent under posted tank wagon.

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Omaha	17 25	18.25	4 0	11 25
McCook	18.75	20 75	4.0	12.75
Norfolk	17 25	17 25	4.0	11 75
N. Platee	18 75	20.75	4 0	13 50
Scottsbluff	18.75	20.75	4.0	13.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Ohio points*	18 0	19.0	4.0	†15.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	13.5	14.5	5 0	12 0
Baton Rouge	14 5	15.5	4 0	13 0
Alexandria†	15 5	16 5	5.0	13 0
Lafayette*	15 5	16.5	5.0	13 0
Lake Charles*	15.5	16.5	5.0	13.0
Shreveport	14 5	15 5	4.0	13.0
Knoxville, Tenn.	18 0	19 0	5.0	15 0
Memphis	16.0	17 0	5 0	12.5
Chattanooga	17 5	18.5	5.0	13 0
Nashville	17.0	18.0	5.0	15 0
Bristol	19 0	20 0	5 0	14.0
Lt. Rock, Ark.	15 0	16 0	5.0	12.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

One-cent discount allowed off station price on all cash purchases. All other station discounts withdrawn October 2, 1930.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	20.0	22.0	6.0	13 5
Newark	12.5	14.5	2.0	10.5
Annapolis, Md.	16 0	17 0	4 0	11.0
Baltimore	15 2	16 2	4 0	9.5
Cumberland	17 0	18.0	4.0	12 0
Wash'gton, D.C.	13.7	14.7	2 0	10 7
Danville, Pa.	17 8	18.8	5 0	11.8
Norfolk	16 3	17.3	5.0	10.0
Petersburg	17 3	18 3	5 0	11 3
Roanoke	18.0	18.0	5.0	13 0
Richmond	16.7	17.7	5.0	10.7
Charles'n, W.Va.	16.5	17.5	4 0	11.5
Keyser	17.1	18 1	4 0	12 0
Parkersburg	15 2	16 2	4 0	10 2
Wheeling	16.4	17.4	4.0	11.4
Charlotte, N. C.	18 3	19 3	5.0	12.3
Hickory	18.6	19 6	6 0	12 6
Mt. Airy	18 5	19 5	5 0	12 5
Salisbury	18.5	19.5	5.0	12.5
Charleston, S. C.	17 3	18.3	6.0	10 3
Columbia	19.2	20.3	6.0	12.3

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	20.0	22 0	6 0	13.5
Augusta	20.0	22 0	6 0	15 5
Macon	20.0	22 0	6.0	13 0
Savannah	18.0	20.0	6 0	14 0
Birm'ham, Ala.	18.0	20 0	5 0	14.5
Mobile	17 0	19.0	4 0	11.5
Montgomery	18 0	20.0	4 0	15.0
Clarks'le, Miss.	18.0	19.0	5.0	12.5
Jackson	15.0	17.0	5 0	13 0
Natchez	18.0	20 0	5 0	13 0
Gulfport	18 0	18.0	5 0	13.0
Vicksburg	18.0	20 0	5 0	13 0
Jack'ville, Fla.	17 0	19 0	6.0	14.0
Miami	19.0	21 0	6.0	14.0
Pensacola	20.0	21 0	6 0	13.5
Tampa	18 0	20 0	5.0	13 0
Lexington, Ky.	17.0	18 0	5 0	14 5
Covington	18.0	20 0	5.0	14 5
Louisville	16.0	18 0	5 0	12.0
Ashland	18.0	20 0	5 0	15 0
Catlettsburg	18.0	20.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 3 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	15.6	17 6	2 0	15.6
New York*	14 3	16 3	2.0	14.3
Buffalo	17.3	19 3	2.0	14.3
Rochester	18 0	20 0	2 0	14 0
Syracuse	18.3	20 3	2 0	14.3
Boston, Mass.	14.5	16.5	2 0	13 5
Augusta, Me.	19 3	21.3	4.0	14 3
Manch't'r, N.H.	19.4	21 4	4 0	14 0
Burlington, Vt.	19 6	21.6	4.0	15.3

*Prices in steel barrels.

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	14 0	19 0	...	12.0
Philadelphia	14 0	19.0	...	12 0
Scranton	14.0	19 0	...	12 0
Allentown	14.0	19.0	...	12.0
Altoona	14 0	19.0	...	12.0
Erie	14 0	18 0	...	11.0
Dover, Del.	17 0	19 0	3 0	12.0
Wilmington	17 0	19.0	3 0	12.0
Spring'd, Mass.	17.5	19.5	2.0	10.0
Worcester	17.3	19.3	2 0	10 0
Boston	14 5	16.5	2.0	10 0
Providence, R.I.	12 7	14 7	2 0	10.0
Hartford, Conn.	17 5	19.5	2 0	10 0
New Haven	17.6	19.6	2.0	10.0

*Includes tax of 3 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline Wh'le'le price	Gasoline Retail price	Gasoline Incl'ds tax of	Kero. tank wagon
Fresno	23 0	21 0	3 0	17 0
San Francisco	23.0	21 0	3 0	15.5
Los Angeles	22.5	20.5	3.0	16 5
Reno, Nev.	28 0	26.0	4.0	19 0
Portland, Ore.	24.5	20.0	4 0	16 5
Seattle, Wash.	23 5	20 0	3 0	16.5
Tacoma	23 5	18.5	3 0	16.5
Spokane	27.5	22.0	3 0	20 5
Phoenix, Ariz.	19.5	22.5	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14 7	10 0
V.M.&P. naphtha	16.7	12 0
Cleaner's naphtha	17 0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

TANK WAGON CHANGES

The Standard Oil Co. (New Jersey), November 21, reduced the tank wagon price of gasoline in Newark, N. J., 1 cent to 12.5 cents, the service station price remaining unchanged.

The Standard Oil Co. of Kentucky, November 14, reduced the service station price of gasoline from 20 cents to 19 cents in Clarksdale, Miss.

PRODUCTION REPORT IN COLOMBIA-PERU

CHATHAM, Ontario, Nov. 22.—Figures covering operations in September in the Peruvian and Colombian fields have been issued by the International Petroleum Co. of Toronto. In the Colombian Field, nine wells were completed in September, with an average initial production of 774 bbls. The total crude production for September was 1,638,926 bbls. and crude shipments for the month were 1,616,228 bbls. The average daily production for October was 55,671 bbls.

In Peru, 13 wells were completed in September with average initial production of 979 bbls. The total crude production for the month was 751,123 bbls. and crude shipments were 313,011 bbls. The average daily production in October was 24,455 bbls., the curtailment initiated in July being continued.

For the nine months ending September 30 there were 91 wells completed in Colombia with an average initial production of 657 bbls. a day. Crude production for the nine months aggregated 15,231,476 bbls. and shipments amounted to 14,361,329 bbls.

In Peru during the nine months' period 95 producing wells were completed with an average initial production of 503 bbls. Crude production for the nine months totaled 7,507,085 bbls. and crude shipments were 3,515,426 bbls.

ASCERTAIN CRUDE DEMAND

WICHITA, Kans., Nov. 25.—A meeting of producers in this city today to discuss the curtailment of production in Kansas together with a plan of proration, ended with the appointment of a committee of three operators who are to canvass the crude buyers to ascertain the demand for Kansas crude oil during the balance of the year. The committee is instructed to report back to a meeting to be held on Wednesday, December 3, in this city.

CRUDE OIL PRICES

(Continued from Page 125)

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Oct. 28, 1930)*	$0.90
Luling (Oct. 28, 1930)†	.75
Mirando (Oct. 28, 1930)*	.75
Pettus (Oct. 28, 1930)*	1.10
Salt Flat (Oct. 28, 1930)*	.90
Thrall‡	...
Lytton Springs (Lockhart)	See gravity table
Dobrowolski (Oct. 25, 1930)§	...
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01
Somerset (Oct. 25, 1930)¶	...
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. §Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ‖Pioneer Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective Nov. 12, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$1.85
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	1.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)	1.45
Corning Grade Oil in Buckeye Pipe Line Co.'s Lines (Oct. 28, 1930)	1.30
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (Aug. 1, 1930)	1.14
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky)	1.10
Wayne District Oil in Cumberland Pipe Lines	1.17

Tide Water Pipe Co.

Bradford district (Nov. 12, 1930)	2.15
Allegany district (Nov. 12, 1930)	2.15

Pure Oil Co.

Cabin Creek, W. Va. (Nov. 13, 1930)	$1.70
Kelly Creek, W. Va. (Nov. 12, 1930)	1.70
Bradford Hollow, W. Va. (Nov. 13, 1930)	1.70

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective Oct. 28, 1930)

Lima	$1.10
Wooster	1.40
Illinois	1.30
Indiana	.87
Princeton	1.30
Plymouth	.88
Western Kentucky	1.15
Midland, Mich.*	1.10
Dundee, Mich. (Oct. 28)‖	...
	Same as Mid-Continent gravity scale
Upper and Lower Traverse Sands, Mich. (Oct. 28)‖	...
	Same as Mid-Continent gravity scale
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Oct. 28)‡	.85
Oil City, Ky.§	1.10
Oil Springs (Canada) (Oct. 28)¶	1.57
Petrolia (Canada) (Oct. 28)¶	1.50

*Posted by Pure Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Refining Co. ¶Posted by Imperial Oil Co., Ltd. ‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$0.56

*F.o.b. ship, based on October transactions and exclusive of taxes and bar dues.

MELLOWED A HUNDRED MILLION YEARS

At last . . . a pure PENNSYLVANIA grade motor oil for easy starting . . . AND EASY SALES . . . in winter!

Motorists by the thousands saw this startling, striking picture of a prehistoric monster...in magazines, newspapers and rotogravures from coast to coast. Then that line *"Mobiline is guaranteed to flow at zero"* caught their eyes. And now they ask for Sinclair Mobiline!

No longer need your Pennsylvania oil customers change to another motor oil for winter driving. The wax that thickens and hardens Pennsylvania oils on cold, wintry days is virtually stripped from Mobiline at as low as 60° F. below zero. This dewaxing process, requiring new oil separators whirling at 15,000 revolutions a minute, takes place in the Sinclair refinery at Wellsville, N. Y.... the newest and largest single refinery using Pennsylvania grade crude exclusively.

Here Sinclair Mobiline is refined 100% from Bradford-Allegany crude...formed in the Devonian Age, a hundred million years ago . . . the costliest of all Pennsylvania crudes! Here this famous crude is triple-filtered to remove all carbon-forming compounds . . . Mobiline retains its clear greenish color long after other oils have turned black in the crankcase.

Just think it over . . . this striking sales story behind Sinclair Mobiline! You can't beat it! With Sinclair Mobiline this winter you get away from cold weather complaints . . . and get more satisfied, steady customers. Stock up now — winter's here!

Sinclair Refining Company (Inc.), New York, Atlanta, Chicago, Fort Worth, Houston, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR MOBILINE

Reg. U. S. Pat. Off. 1906, Renewed 1925

Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

Guaranteed by SINCLAIR REFINING CO. INC. to be 100% pure PENNSYLVANIA GRADE OIL

35¢ *per quart*

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DISAPPOINTMENTS IN JOINER AREA, LIMITING NORTHEAST AND SOUTHEAST

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 24.—Two disappointments in the Joiner area, central Rusk County, were abandoned this week as dry. The Arkansas Fuel Oil Co.'s No. 1 Worrell, about three-fourths of a mile southeast of the discovery, being bottomed at 3,700 feet after a 12-quart shot in hard saturated sand from 3,580-81 feet failed to bring about desired results and production, and Lauren L. Smith and another's No. 1 W. H. Worrell in the Ximenes Survey, northeast of the discovery, was given up at a total depth of 3,680 feet, after the showing from 3,535-72 feet failed to materialize into even a small well. These two dry holes define the area to the northeast and southeast.

Stroube & Stroube's No. 1 Frederick, in the Ximenes Survey, about 700 feet north of the discovery, has a chance to extend production in that direction, and at this writing the well is shut down at 3,618 feet waiting for casing. The test had an oil show from 3,538-68 feet, and a drill stem test showed 4 fourbles of oil and 1 fourble of rotary mud at 3,506 feet, and with these two showings may make a commercial producer, although many are skeptical about this test also. If it is dry the Joiner area has apparently no chances of making a pool except to the west and Frank Foster and Deep Rock Oil Co.'s No. 1 Ashby, in the Ximenes Survey to the west of the discovery, will be the next test to be closely and hopefully watched for production and extension, opening up the major part of the pool in that direction. The last report from the field gave it as drilling below 3,255 feet in shale.

May Extend South

L. H. Hunt's No. 1 Bradford, in the Ximenes Survey drilling to the south of the discovery, may produce a commercial well and run the pool in that direction, but hopes for this test are not running any too high at this writing, although it has about 50 feet more to go before picking up the pay horizon producing in Joiner's No. 3 Daisy Bradford. It is now drilling below 3,644 feet in shale and lime, and another day's drilling should tell the tale of this test. If it is dry the Joiner well will be proven to be located on a "shoestring" of sand with hopes of production only to the west which will soon be proven good or worthless according to the completion of Foster and Deep Rock Oil Co.'s test.

Anderson and others' No. 1 Bradford, in the Ximenes Survey, is about one location to the east of the Joiner discovery and has a chance of making a producer and a short extension of production, but it has another 575 feet to go before any hint of its possible outcome may be told. It is now drilling below 3,020 feet.

C. M. Joiner's No. 3 Mrs. Daisy Bradford, the discovery well of this new pool, averaged around 180 bbls. per day during the week, a small decline from the past week's daily average, but the well has been flowing erratically and the following week may show it even flowing better than last week's figures.

Anderson County Test

Humble Oil & Refining Co.'s No. 1 McGaffrey, on its Blackfoot Block in Anderson County, is another East Central Texas test that is not presaging much luck for this area. It is now drilling below 3,921 feet in shale and looks to be no higher than Roeser and others' No. 1 Moody which was a dry hole 2 miles southeast. This area has been highly favored from the standpoint of a promising core drill structure, but may prove to be no better than Shell Petroleum Corp.'s LaRue structure in Henderson County. That structure and the test drilled on it caused high speculation by lease brokers, companies and royalty buyers, but it also proved dry and dashed many hopes for another Woodbine Pool such as found by the Pure Oil Co. at Van.

The Van Field had six completions this week, one a dry hole to the north. This was Pure Oil Co.'s No. 1 A. G. Tunnell in the northeastern corner of the A. G. Tunnel 50-acre tract, the deepest test yet drilled in the field. It was abandoned as dry at 3,797 feet.

Carroll District

One of the best wells in the field was completed in the Carroll district by the Humble Oil & Refining Co. on its A. J. Fowler lease. It was bottomed at 2,918 feet making an initial flow of 346 bbls. the first three hours through eleven-sixteenths-inch choke.

Pure Oil Co.'s No. 1 R. E. Cade moved production another 1,500 feet farther west when it came in for an initial gauge of 101 bbls. at a total depth of 2,965 feet. It is near the north line of the R. E. Cade 50-acre farm in the A. McPhail Survey. An offset location has been staked on the W. H. Cook 86-acre farm in the Mund Cross Survey to the north.

The Pure Oil Co. asked that the allowable for the Van Pool be raised to around 50,000 bbls. per day, or twice the present amount, but all companies and operators present at the hearing held at Austin on November 22 seemed to be against this increase in production from this area, and the present amount will probably be deemed sufficient by the Railroad Commission. The Van Field and Carroll district have a combined total allowable of 27,500 bbls. per day. The company stated it had a market outlet for the additional amount and that no crude would have to be stored, but this remark did not have any weight in procuring any sentiment for the increased allowable.

New nominations for the East Central Texas district total 38,355 bbls. A special hearing will be held to discuss whether or not Pure Oil Co.'s request for an additional 22,500 bbls. from the Van Field will be granted.

East Central Texas Production

Daily average production of the pools in the East Central Texas area for the week ending November 22 follows:

Boggy Creek	2,880
Cedar Creek	50
Currie	310
Hill County	20
Mexia	3,900
Minerva	545
Nigger Creek	190
Powell	5,346
Richland	150
Rusk County	185
Thrall	40
Van	27,718
Wortham	620
Total	41,963
Week ending November 15	41,727
Increase	236

COMPLETIONS IN EAST CENTRAL TEXAS

Delta County

Delta Development Co.'s No. 1 Hays McKinney, Pecan Gap 421-481 feet, Woodbine sand 2,801-2,901 feet, dry and abandoned, total depth 3,081 feet.

Panola County

Mike Smith and others' No. 1 Hunt, location abandoned.

Rusk County

Arkansas Fuel Oil Co.'s No. 1 J. A. Worrell, oil sand 3,547-57 feet, dry and abandoned, total depth 3,700 feet. Lauren L. Smith's No. 1 W. H. Worrell, dry and abandoned, total depth 3,680 feet.

Van Zandt County

Pure Oil Co.'s No. 1 A. G. Tunnell, dry and abandoned, total depth 3,797 feet. Same company's No. 1 R. E. Cade, initial production 101 bbls., total depth 2,965 feet. Same company's No. 2 G. C. Stewart, initial production 96 bbls., total depth 2,959 feet. Same company's No. 3 E. B. Tunnell, initial production 108 bbls., total depth 2,942 feet. Same company's No. 1 L. A. Smith, initial production 132 bbls., total depth 2,933 feet. Humble Oil & Refining Co.'s No. 1 Fowler, total depth 2,918 feet, initial production 346 bbls. in three hours through eleven-sixteenths-inch choke.

EAST CENTRAL TEXAS WILDCATS

Week Ending November 24

CHEROKEE COUNTY

Arkansas Fuel Oil Co.'s No. 1 Deaton, 330 ft. from S line, 300 ft. from E line, from 150-ac. tract in F. Caimen heirs Sur., 3 miles SE of Jacksonville ..... Base Pecan Gap 3,813 ft.; shut down 4,375 ft.

DELTA COUNTY

D. S. Hood's No. 1 J. J. Balser, 185 feet from S and 580 feet W of Balser 40-acre tract in SE cor. T. B. Laddin Sur. ..... Drlg. 680 ft.

Worthington and Stevens No. 1 W. H. Dejarnett, 150 ft. from S and 776 ft. from W of 52-ac. tract, E. Chick Sur. ..... Drlg. 485 ft.

FANNIN COUNTY

E. A. Parsons et al's No. 1 Morgan in the English Sur., 3 miles NE of Savoy ..... Shut down 3,422 ft.

E. M. Rogers' No. 1 McSwain, 300 ft. S and E of Michael Daly Sur., in Juana Telgado Sur., 1½ miles NE of Lomasco ..... Shut down 1,500 ft.

GREGG COUNTY

M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,667 ft. S of Hamby 3,800-ac. tract, Martin Lant Sur. ..... Shut down 2,588 ft.

J. C. Ferrell's No. 1 J. K. Lathrop, 661 feet from N and 1,194 feet from W of 96-ac. tract, William Robinson Sur. ..... Rig up.

HENDERSON COUNTY

H. E. Ashburn et al's No. 1 T. E. Barry, center of Barry's 59-ac. tract in A. York Sur. ..... Coring 3,250 ft.

E. L. Chapman's No. 3 Cade, 1,560 ft. from N and 750 ft. W. J. B. Dorsey Sur. ..... Derrick.

Texas State Oil Co.'s No. 1 Skinner, 150 ft. from E and 150 ft. from S. J. Henshaw Sur. ..... Drlg. 3,893 ft.

HUNT COUNTY

Mamie S. Hammond's No. 1 W. H. Adams, center of survey, west of Branson Sur., J. A. McFarland Sur. ..... Derrick blew down.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Spudded and shut down.

NAVARRO COUNTY

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in Finley Sur. ..... Shut down 960 ft.

POLK COUNTY

Sunshine Oil Co.'s No. 1 J. A. Collins, 313 ft. from NE 150 ft. from SE at right angles to line, A. Viesca Sur. Shut down 3,000 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

RED RIVER COUNTY

Buffington et al's No. 1 L. H. Moore, 160 ft. from S and 160 ft. from W of 100 acres, Daniel Cornelius Sur. ..... Drlg. 450 ft. (rotary test).

Lloyd Oil Co.'s No. 1 R. H. Mace, 150 ft. from N and 150 ft. E of Mace 86-ac. tract, William Cullan Sur. ..... Drlg. 1,000 ft.; Pecan Gap 590-900 ft.

Droupleman and Bunely's No. 1 J. W. Cunningham, 250 ft. E and 250 ft. S of 180-ac. tract, S. B. Shi Sur. ..... Drlg. 1,260 ft.

RUSK COUNTY

Stroube and Stroube's No. 1 H. Frederick, 156 ft. from N and 500 ft. from W of SE of Frederick 195 acres. Juan Ximenes Sur. ..... Show oil 3,538-68 ft.; to set csg., T. D. 3,618 ft.; drill stem test 3,506 ft.; 4 fourbles oil, 1 fourble rotary mud.

E. L. Chapman's No. 1 A. P. Finney, 150 ft. from W of E 20 acres of 102-ac. tract, Isaac G. Parker Sur. .... Derrick.

Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E and 150 ft. from S of 50-ac. tract, Juan Ximenes Sur. ..... Derrick.

Goodman's No. 1 Oscar Jones, 250 ft. from W and 150 ft. from N of railroad, Brown Sur. ..... Rig up.

Omaria Meredith's No. 1 Robertson, 150 ft. N along W line of George Guthrie Sur. from SE cor. and 150 ft. W of E line of Robertson 20-ac. tract, R. H. Pinney Sur. ..... Derrick (rotary).

A. A. Malone's No. 1 G. T. Moore, 150 ft. from E and 150 ft. from S, Juan Ximenes Sur. ..... Digging pit.

Frank Foster et al's No. 1 Ashby, 200 ft. from N and 250 ft. from E of 75-ac. tract, Juan Ximenes Sur. .... Drlg. 3,254 ft.

Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N and 420 ft. from E of SE cor. of B. Smith Sur. ..... Derrick.

Mass et al's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartinas Sur. ..... Derrick down.

Rosenfield's No. 1 L. A. Pinkston, 150 ft. from N and 263 ft. from W of Pinkston 77-ac. tract, Maria V. Pena Sur. ..... Shut down 2,015 ft.

Anderson et al's No. 1 G. T. Moore, 600 ft. from E along S line of tract, Juan Ximenes Sur. ..... Derrick.

Anderson et al's No. 1 Bradford, 150 ft. from and N 150 ft. from E of Lot No. 2, Juan Ximenes Sur. .... Drlg. 3,020 ft.

Tex-Lloyd Oil Co.'s No. 1 Camp, 150 ft. from E and 150 ft. S of 5-ac. tract, Juan Ximenes Sur ..... Drlg. 3,284 ft.

L. H. Hunt's No. 1 Bradford, 1,269 ft. W and 1,083 ft. S of SW cor. of J. T. Moore's 100 acres, Juan Ximenes Sur. ..... Drlg. 3,644 ft.

Bateman et al's No. 1 Lois Della Crim, 3,083 ft. W along N line of survey of NE cor. and 400 ft. S at right angles to N line of survey, E. G. Serien Sur. ..... Drlg. 1,730 ft.

SMITH COUNTY

Owens & Sloan Oil Co.'s No. 1 Stearns, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur., and 80 ft. E at right angles to W line of J. Waller Sur. ..... Shut down 3,770 ft.

Sun Oil Co.'s No. 1 D. McGehee, 500 ft. W and 250 ft. S of SW cor. of Mrs. Julia Phillips 55-ac. tract, Thomas Quevado Sur. ..... Drlg. 2,419 ft.

Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Shut down 2,000 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,550 ft.

TITUS COUNTY

Deep Rock Oil Co.'s No. 1 Ed McElroy, C of 100 acres, K. Lewis Sur. ..... Drlg. 2,468 ft.

VAN ZANDT COUNTY

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.

Cranfill & Germany's No. 1 Swain, 137 ft. N and 50 ft. from W of excess strip on W side of O. L. and L. L. Swain farm ..... Shut down 14 ft.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Temporarily abnd.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... Temporarily abnd.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox and A. C. Night Sur., 1,785 ft. N of S line and 524 ft. E of W line .... Shut down 200 ft.

Nell McMehory's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ..... Rig up.

Humble Oil & Ref. Co.'s No. 5 R. S. Blake, 150 ft. from N and 150 feet from E of SW cor of Mrs. E. E. Carroll farm, John Walling Sur. ..... Location.

Humble Oil & Ref. Co.'s No. 6 R. S. Blake, 150 ft. from N and 150 ft. from W of SW cor. of Mrs. E. E. Carroll farm, elevation 485 ft.; John Walling Sur. ..... Location.
J. C. Fare's No. 1 P. S. Hand, C of Hand's 50-ac. tract, William Shuman Sur. ..... Drlg. 1,800 ft.
Humble Oil & Ref. Co.'s No. 2 Sanger, 506 ft. from N and 200 ft. from W, John Walling Sur. ..... Drlg. 2,429 ft.
Pure Oil Co.'s No. 2 A. W. Ellison, 200 ft. N of S line and 225 ft. W of E line of lease, James Rase Sur. ..... Cement setting 2,779 ft.
Pure Oil Co.'s No. 2 A. D. Clark, 380 ft. NW of S cor. of Mund Gross Sur., and 170 ft. SW of NW line of lease in J. Prado Sur. ..... Drlg. 2,622 ft.
Pure Oil Co.'s No. 4 N. E. Clark, 109 ft. W of W line of A. D. Clark 17-ac. lease, and 645 ft. S of N line, A. H. Wiley Sur. ..... Drlg. 1,260 ft.
Pure Oil Co.'s No. 2 F. B. Smith, 139 ft. E of W line and 157 ft. N of S line of lease, in John Walling Sur. ..... Cement setting 2,657 ft.
Pure Oil Co.'s No. 2 A. D. Clark, 203 ft. from N of S line and 110 ft. W of E line of lease, John Walling Sur. ..... Cement setting 305 ft.
Pure Oil Co.'s No. 2 J. T. Taylor, 202 ft. from W of E line and 150 ft. from S of N line, John Walling Sur. ..... Drlg. 2,448 ft.
H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Shut down 2,212 ft.
B. P. Hervey's No. 1 Foster & Smith, 150 ft. S and 150 ft. W of 104-ac. tract, Margaret Neal Sur. ..... Shut down 4,601 ft.
Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick.
Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1 027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. Temp. abnd. 2,987 ft.
Imperator Oil Co.'s No. 1 G. J. Luther, in SW cor. G. J. Luther 32-ac. tract ..... Plug; T. D. 3,022 ft.; will plug back; showed salt water.
Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.
Jenkins et al's No. 1 V. T. Davis, SE cor. of 139.8-ac. tract, Nacogdoches County School Land ..... Shut down 3,031 ft.; pumping 8 bbls. per day.
Pure Oil Co.'s No. 2 O. L. Swain, 200 ft. N of S line and 250 ft. E of W line of lease in John Walling Sur. ..... Drlg. 2,705 ft.
Pure Oil Co.'s No. 3 W. F. Swain, 250 ft. N of S line and 200 ft. E of W line in John Walling Sur. ..... Drlg. 2,732 ft.
Pure Oil Co.'s No. 2 Mary P. Neills 100-ac. tract, 225 ft. E of W line and 658 ft. S of N line, James Rose Sur. ..... Cement setting 2,797 ft.
Pure Oil Co.'s No. 1 H. C. Gilbert 62-ac. tract, 250 ft. W of E line and 250 ft. S of N line, Mund Gross Sur. ..... Coring 2,475 ft.
Pure Oil Co.'s No. 1 Sam Allen, 835 ft. E of W line and midway between N and S line of lease, J. Prado Sur. ..... Cement setting 2,841 ft. (rotary).
Pure Oil Co.'s No. 2 W. H. Cook, (86 acres), 675 ft. W of E line and 225 ft. N of S line, Mund Gross Sur. Location.
Pure Oil Co.'s No. 2 R. A. Howell (22 acres), 894 ft. N of S line and 225 ft. E of W line of tract in A. McPhail Sur. ..... Location.
Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick standing.
The Texas Company's No. 4 R. A. Tunnell, 335 ft. E of most easterly W line and 217 ft. S of N line of lease, John Walling Sur. ..... Drlg. 1,047 ft.
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... Drlg. 109 ft.
Vitek Oil Co.'s No. 1 Smith, 150 ft. S and 15 ft. from W of L. A. Smith 40-ac. farm in John Walling Sur. Derrick.
The Texas Company's No. 2 R. A. Tunnell 100 acres, 250 ft. S of N line and 200 ft. W of E line, John Walling Sur. ..... Swabbing tubing 2,938 ft.
Maud Powell's No. 1 Killam, 1,360 ft. from NW, along SW line from most S cor. of 52-ac. tract and 425 ft. NE to SW line, Jessie Russell Sur. ..... Shut down 4,203 ft.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

WATCHFUL WAITING IN THE OKLAHOMA MARKET

(Continued from Page 28)

The railroads have consistently paid prices generally favorable to the refiners because of the exchange of business along their lines. This year some fuel oil purchasing agents for the railroads have been inclined to take advantage of the low level of fuel prices, to inject less favorable provisions into new contracts. In general, however, the newly signed contracts have not suggested this condition to be serious. One contract, made prior to the October crude cut specified a price of 65 cents per barrel with 36 gravity oil at that time posted at $1.29. This base price is to advance 60 per cent of any crude price advance, with a maximum specified of 80 cents per barrel, the 65 cents remaining as the minimum.

Lubricants and Wax

Dullness prevailed over the lubricating oil market again and bright stocks were freely offered carrying price concessions where large quantities were involved. Some 25 cold test 150-160 viscosity D colored bright stock was reported going for export at 17 cents. A 3-cent differential between the spot price and that quoted to refiners and exporters was observed at times in the past, but it was suspended when bright stock prices were reduced to around 34 cents. This sale, however, indicates that recognition is again being given to export business as a means of moving large quantities, but at reduced prices.

Cylinder stocks were correspondingly weak. Steam-refined cylinder stock was freely quoted at last week's price level and some material was said to have been sold out of Oklahoma City refineries for delivery over the rest of the year for slightly less than 3 cents per gallon. While the sale is not considered representative of the market, it has had a depressing effect and is pointed to as leading a further downward movement of prices.

Wax prices remained unchanged with the 124-126 A.M.P. material going at 2 to 2⅛ cents in barrels or bags.

STOCKHOLDERS PROTEST AGAINST REFINERY SALE

NEW YORK, Nov. 24.—Opposition to the sale of Indian Refining Co. assets to The Texas Company has developed coincidentally with an announcement by the latter that it is ready to proceed with the transaction.

Asserting that the offer of The Texas Company to acquire Indian Refining Co. through an exchange of stock would result in stockholders of the latter company receiving less than a third of the value of their holdings, a committee of opposition to the plan, headed by Jay G. Robinson, president of the National Railway Devices Co., has circularized the 5,800 Indian Refining Co. stockholders urging them to reject the offer.

The letter states that the committee was "astonished and perplexed" at receipt of the circular letter of November 1 from directors of the Indian Refining Co. advising of "the surprising financial embarrassment" and the Texas offer.

The letter of the opposition committee declares that not including Indian Refining's dewaxing process, the company has $25,000,000 in tangible assets, and total liabilities of only slightly more than $7,000,000. Of the latter, only $1,600,000 is pressing. "We have $4,700,000 in working assets, of which $385,000 is cash in banks," the letter states.

The committee's letter contends that use by The Texas Company of the Indian Refining Co.'s dewaxing process would save the former close to $6,000,000 per year in the production of lubricants and adds: "From certain circumstances in which first named below (Mr. Robinson) has participated, we firmly believe that another 'major' company is allied with The Texas Company in the desired purchase of Indian. If so, double this amount at least would be saved annually by these two major companies on their production outputs."

Late Fields

(Continued from Page 40)

cor. NW, Section 24-17-2w, Logan County wildcat, cored Wilcox sand at 5,735-43 feet which was dry. The test is shut down.

B. A. LaSalle's No. 1 Skelly, NW cor. SE SE, Section 30-5-5, Pontotoc County, found a hole full of water at a total depth of 2,692 feet, and after being plugged back to 2,680 feet it was abandoned.

Pure Oil Co.'s No. 1 Tiger, SW cor. NE NW, Section 3-8-5, in the north extension to the Carr City Pool, made 3,520 bbls. in 24 hours from the Wilcox sand at 4,140-51 feet after a 15-quart shot.

Prairie Oil & Gas Co.'s No. 3 Fixico, SW cor. NW, Section 2-8-5, Carr City Pool, swabbed 200 bbls. in 15 hours from Wilcox sand at 4,156-61 feet after a 10-quart shot.

Clark & Cowden's No. 1 Brown, NE cor. SE NE, Section 12-4-7, Pontotoc County, found a showing of oil and gas at 1,933-35 feet. The well extends production a quarter of a mile.

KANSAS

The Barnsdall Oil Co. is the fourth Mid-Continent oil company to join the Prairie Oil & Gas Co. in prorating wells over 5 bbls. per day on the marginal curtailment plan, similar to the Oklahoma plan. Other companies thus prorating are Phillips Petroleum Co. and Skelly Oil Co.

Dixie Oil Co., Amerada Petroleum Corp. and others' No. 1 Zarger, NW cor. NE SE Section 16-21-3w, McPherson County, found oil in the Simpson pay at 3,412-20 feet, and from 3,420-25 feet oil rose 2,150 feet in the hole in four hours. The well extends production in the Voshell Pool a half mile to the south.

Dixie Oil Co. and others' No. 1 McCarty, SW cor. SE Section 30-25-17w, Edwards County, has been completed for 40 bbls. of oil a day and 3,500,000 feet of gas. The sand was found from 4,560-70 feet.

Deal & Foster's No. 1 Brooks, NW cor. SW SE Section 30-21-6, Cowley County, was dry in the Bartlesville sand, 2,859-2,907 feet. It is located a half mile east of production in the area.

Gypsy Oil Co.'s No. 1 Wellman, NE cor. Section 29-21-9w, Rice County, had a showing of oil at 3,437 feet and was landing the 5-inch casing to drill deeper.

Atkinson, Dixie Oil Co. and Amerada Petroleum Corp.'s No. 1 Misak, SE cor., Section 25-34-6w, Harper County wildcat, had the top of the Mississippi lime at 4,636 feet and was drilling in it at 4,932 feet.

Muth Brothers' No. 1 Beyers, NE cor. NW, Section 21-19-9w, a wildcat in Rice County, found 3,000,000 feet of gas at 2,000-02 feet. The test was drilling deeper.

Danciger Oil & Refining Co.'s No. 1 Weaver, Section 3-2-35w, Rawlins County, located within 6 miles of the Nebraska state line, and the most western wildcat test in the northern half of the State, was drilling at 2,010 feet.

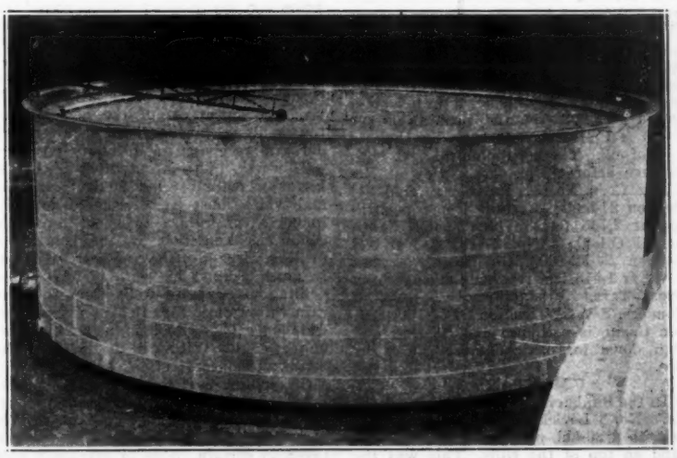
Another new wildcat test was announced during the week in Norton County, in the northwestern part of the State. Richards and others' No. 1 Colby, in Section 17-4-21w, in the southeastern part of the county, was expected to be started in the near future.

Plains Oil Co. and others' No. 1 Church Land, SE cor. NW, Section 11-27-1w, on the east edge of Wichita, Sedgwick County, had a hole full of sulphur water in the Simpson sand at 3,465-68 feet and was drilling deeper at 3,478 feet.

EXPORTS OF EQUIPMENT FOR OIL INDUSTRY USE

WASHINGTON, D. C., Nov. 24.—Oil well and refinery machinery shipped abroad during September was valued at $1,717,000 compared with $1,878,000 shipped in September, 1929, and $872,000 in September, 1928. The nine months period ending September showed a regular pronounced increase in this trade, the total for these months of 1930 being valued at $20,809,000 compared with $18,989,000 for the same period of 1929 and $10,891,000 for the nine months of 1928. These increases in oil well and refining machinery were much greater than in the aggregate of all machinery, according to W. H. Rastall, chief of the Industrial Machinery Division, Department of Commerce. The grand total in value of all industrial machinery shipped abroad for the nine-month periods of the last three years were as follows: 1928, $151,802,000; 1929, $189,427,000; 1930, $180,014,000.—C. E. K.

PHOTOGRAPHER GOT A HAPPY BREAK ON THIS PICTURE



This scene at a pump station of the Texas-Empire Pipe Line Co. near Bunceton, Mo., shows one of the big storage tanks with its sleek floating deck and the wooded hills of Missouri in the background.

ROCKY MOUNTAIN AREA

(Continued from Page 114)

2,000 feet. The geology is by Dr. F. F. Hintze. Producers & Refiners' No. 4. SW SE Section 7-26-89, Wertz Dome, has recovered tools and is preparing to shut down. This is an old well upon which deepening operations to the Tensleep was started last July, but it had trouble from the start and made only a few feet of hole. Total depth is 3,396 feet. Producers & Refiners' No. 3, SE NW Section 2-19-88, Hatfield Dome, is bottomed at 4,343 feet and cleaning out. The tools were lost at this depth. Midwest Refining Co.'s No. 27 Union Pacific, SE SE Section 11-20-81, Elk Mountains, is bottomed at 695 feet and sidetracking 18-inch bit at 675 feet.

Natrona County

Golden West Oil Co.'s No. 1 State, Section 36-36-81, Segmen Basin, is reported to have suspended drilling at 1,115 feet. This is the depth at which the Muddy sand was expected. The location is 4 miles to the southeast of producers on the North Casper Creek structure. Wind River Oil & Gas Co.'s No. 1 DeLong, NE SE Section 9-38-78, west of Teapot Dome, tested the second Wall Creek at a total depth of 3,540 feet and is plugging back to shale showings at 1,605, 1,220 and 1,150 feet. The first Wall Creek had a show of oil and gas and the second sand a little water. The shale production is estimated at 35 to 50 bbls. a day. Vulcan Petroleum Co. has been formed with a capital of 4,000 shares, par $25, to take over the holdings of the Hughes Syndicate east of Salt Creek and it will complete its No. 1, SE SE Section 10-39-78, which is standing at 1,450 feet with the 5⅝-inch on bottom. The directors are J. A. Wilson, S. H. Willey, A. B. Norris, A. W. Parmenter and W. C. Hughes.

Midwest Refining Co.'s No. 29-DS, NW Section 35-40-79, Salt Creek, the test to the granite, is standing with 8⅝-inch cemented on top of the Tensleep at 3,775 feet. This horizon showed for 1,800 bbls. a day when originally drilled through.

Midwest Oil Co.'s No. 8-SD-3, is bottomed at 2,975 feet and rigging cable tools to drill into the third bench of the Sundance, and its No. 29-SD-3, NW NE Section 26-40-79, is drilling at 1,255 feet. Midwest Refining Co.'s No. 11, SE NW NW Section 32-34-77, Geary Dome, is bottomed at 263 feet and running 15½-inch to cement.

Converse County

Ohio Oil Co.'s No. 5 Jones, Section 9-33-76, Big Muddy Field, is drilling at 3,370 feet, and Continental Oil Co.'s No. 50 Whiteside, SW SW Section 9-33-76, is shut down indefinitely at 3,345 feet.

Hot Springs County

Gebo Consolidated Oils, Inc.'s No. 1, SW cor. Section 23-44-95, Gebo Dome, which has been bottomed at 1,410 feet on top of the Wall Creek for some time, is ready to resume. It is reported to have 200 feet of oil in the hole. Midwest Refining Co.'s No. 8 Weeks, NW SE Section 6-44-98, Wagonhound, is bottomed at 4,520 feet and fishing for tools.

Park County

Producers & Refiners' No. 2, NW NE Section 14-48-102, Pitchfork structure, joint with the California Exploration Co., discovery well on this structure, is bottomed at 3,903 feet and cleaning out at 3,800 feet after being shot. The hole is full of oil. The well pumped 280 bbls. average before being shot. Midwest Refining Co.'s No. 31 Rosenberg, SW SE Section 24-58-98, Frannie Dome, is drilling at 2,745 feet in blue shale. Continental Oil Co.'s No. 27-Elk-2, NE NE Section 24-58-100, Elk Basin, is shut down at 1,473 feet repairing damage from fire. Texas Production Co.'s No. 2 Sonners, SW SW Section 20-51-100, Oregon Basin, is bottomed at 3,645 feet and shut down to repair damage caused by fire.

MONTANA

In the Sunburst Field, the Monopet Oil Co.'s No. 3 Levick, Section 28-25-1, came in with a 20-bbl. production in the Stray sand on top of the Ellis. This was the only completion in the field for the past week. No new wells were started. The heavy storms over northern Montana have caused practically all field work to shut down the past week.

In the Border Field, on the Montana side, No. 2 Monalta Buckley, Section 1-37-4, is drilling again, but has a fish in the hole. Two wells are active on the Canadian side of the line and the A. P. Consolidated on the Canadian side has been abandoned.

In the new Cut Bank gas field, the O'Neil well is drilling again after filling back 400 feet of hole to straighten. The Texas well is cementing the second time. The B.&H. well is drilling about 1,350 feet after finding a show of gas in the Colorado shale.

In the Pondera Field, the Texas Production is drilling on No. 1 Copley, about the top of the Kootenai formation, and this is the only well drilling in this field. In the Banatyne Field the Sterling Oil Co. has a well drilling.

Rocky Mountain Production

Average daily runs from fields week ending November 22:

WYOMING	
Salt Creek	27,140
Big Muddy	3,030
Grass Creek	2,090
Elk Basin	660
Dallas	350
Dry Creek	....
Frannie	850
Hudson	200
Lovell	10
Teapot	20
Warm Springs	100
Rock River	2,140
Lance Creek	270
LaBarge	1,820
Poison Spider	390
Oregon Basin	3,110
Osage	1,000
Ferris	10
Byron	519
Lost Soldier	4,580
Simpson Ridge	50
Dutton Creek	50
Total Wyoming	47,310
MONTANA	
Cat Creek	1,130
Lake Basin	50
Kevin-Sunburst	2,540
Pondera	1,200
Border	540
Total Montana	5,460
COLORADO	
Florence	452
Moffat	1,145
Fort Collins	1,194
Iles Dome	1,021
Rangley	50
Tow Creek	368
Boulder	25
Total Colorado	4,262
NEW MEXICO	
Rattlesnake	1,200
Hogback	470
Table Mesa	80
Artesia	647
Cap Rock	180
Getty	264
Hobbs	36,733
Jal	1,346
Lea	1,829
Miscellaneous	2,340
Total New Mexico	44,989
Total Rocky Mountain	102,021
Total previous week	101,657
Difference	364

NEED HIGHER CRUDE PRICES, SAYS GODBER

(Continued from Page 33)

be justified in paying the producer a price for his product which would en able the producer to make a reasonable return on his investment.

In Rumania the Royal Dutch-Shell group took the initiative in a scheme of conservation so that crude should not be produced in excess of the demand and the result so far has been that the producer is receiving an adequate return.

However, there is one other important factor which must not be lost sight of, and which must be corrected before the industry can return to so-called normal conditions and that is the control of drilling. Here also the producer, frequently much against his will, is forced into drilling many more wells than the pro rata allowance for fields necessitates. Oklahoma City Pool is a striking example of it. With all the will in the world, producers often cannot reduce their drilling strictly within the limits needed to produce their share of production for a new field because of royalty and offset obligations. Steps have been taken in certain fields to develop a unit plan operation by which lessees combine their interests and develop the field jointly but the benefits of such a scheme are largely neutralized by these royalty provisions. The unification of royalties upon new structures is just as important as that of leases and although it is a much more difficult and complicated problem. the industry would be well advised to attempt some such plan whenever a wildcat well is contemplated. Useless drilling when the pipe line outlet from fields is limited to a known and restricted quantity is unnecessary and particularly under present conditions cannot be justified upon any grounds. Conservation cannot be fully successful until this or a similar plan for the control of drilling has been developed.

Much to Be Done

Undoubtedly much has been done to correct the evils within the industry but much still remains to be done. Not only could this country produce very large quantities in addition to its present production but practically every known producing country in the world could also largely increase its supplies within a very short time. Conservation is, of

Frederick Godber

necessity, therefore, here to stay. It is evident that considerable dissatisfaction exists as to the allocation of outlets and the division of sacrifice throughout the fields and much care will need to be exercised so that either in respect to exploration or exploitation or in regard to prices, those leaders who are in a position to effect the situation, should weigh with care any decision they may take which will in any respect endanger the conservation movement and lead to further dissatisfaction amongst the producers.

Particularly in respect of prices decisions have been taken in the distant and near past in connection with which one would be inclined to feel that conservation had not been given sufficient weight.

Happily the Venezuelan producers have at last seen reason and are showing definite signs of closer co-operation and reduction in drilling and a substantial reduction in production—all steps in the right direction. There seems no reason to doubt that closer co-operation between the producing countries could result in the world supplies of crude and refined products being brought strictly into line and one can easily foresee that this condition could be brought about within a comparatively short time if larger companies would attack the problem from the point of view of the benefits accruing to the industry as a whole and therefore to them individually instead of from a strictly limited viewpoint of individual and personal gain.

Important to Public

The problem is of great importance to the industry and to the producer in particular, but is also of great importance to the public because with wide fluctuations in the prices for their products, wide fluctuations in the margin of profits have also occurred, in order to make good times compensate for bad times. Under such circumstances the tendency must be for the average margin of profit to be greater in order to compensate for this condition, than if prices were stabilized and maintained steady over a long period. If the producers and marketers were assured of a proper return on their investment, they would have to be satisfied with a smaller average margin and to that extent the cost to the consumer over a number of years would inevitably be less.

REACTIONARY TONE IN THE EASTERN MARKET

(Continued from Page 119)

points, and in some instances considerable selling pressure has been exerted. particularly on shipments designed for export markets. Under these circumstances, the market naturally lacks stability, and is more a "trading proposition" now than for a long time back.

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf ports for the week ended November 15 totaled 256,000 bbls., a daily average of 36,571 bbls., compared with 765,000 bbls., a daily average of 109,286 bbls. for the previous week and a daily average of 64,429 bbls. for the four weeks ended November 15. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	46,000
New York	170,000
Philadelphia	40,000
Total	256,000
Daily average	36,571
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	256,000
Daily average	36,571
Daily average four weeks	64,429

Distribution of total California oil receipts is as follows:

Gasoline	166,000
Fuel oil	90,000

Shipments of refined products from California the Atlantic Coast during the week (with identity of owner of tanker moving the oil where such owner of record is an oil company) were as follows:

To New York—64,700 bbls. of gas oil on the Tiger; 73,000 bbls. of gasoline on the New York (The Texas Company); 73,900 bbls. of Diesel oil on the Acme (Standard Oil Co. of New York); 113,600 bbls. of gasoline on the Tidewater (Tide Water Associated Oil Co.); 43,300 bbls. of Diesel oil and 53,800 bbls. of gasoline on the Japan Arrow (Standard Oil Co. of New York).

TEXAS ALLOWANCE IS 680,238 BARRELS DAILY

(Continued from Page 29)

product does not sell it, he said, as there is no market for it. He emphasized a warning that curtailment is necessary if the industry is to be saved. Gulf Coast oil felt the drop, he said, even though operators said they had a full demand for their product.

Roy B. Jones of Wichita Falls said the bootleg gasoline is selling as low as 4⅛ cents a gallon f.o.b. refinery. He said his refinery did not meet the price of 4⅛ cents and 4¼ cents but had been forced to sell as low as 4¾ cents a gallon. This is ruinous, he said, and is below the cost of production. He asked: "How long can we stand it?"

The conference went on record as favoring the limiting of all new wells except offset wells to a daily production of 50 bbls. for 90 days after its completion and placing a maximum limit of 500 bbls. on all wells. This is in line with proration attempts in Oklahoma, it was pointed out, and would advance this State in proration attempts. Another resolution urged stringent enforcement of the common purchaser act.

A vote of confidence was tendered Mr. Penn by the committee for his efforts in seeking to better the conditions of independent producers after he had ex-

plained that he has been engaged in this work since January 15.

Co-operation Essential

Co-operation of the producers with the Railroad Commission's orders is vital if the producers expect to obtain relief, Mr. Penn declared. Purchaser and producer must co-operate also and it is futile to believe a seller can force his products on an unwilling buyer and expect to make money. Blocking the State's proration attempts at this stage would cause ruin to the producers, and to this end he urged them to aid in enforcing proration.

"It's a buyer's market now, and the only way we can convert it into a seller's market is to reduce the supply below the demand," he declared. He predicted that the climax would be reached in early spring when the market for gasoline and oil increases.

Mr. Penn said the proration committee had frowned on an application of the Pure Oil Co. to raise its Van production 22,000 bbls. He said it would create a bad impression throughout the whole industry, when all others are seeking to curtail. A special hearing will be held soon in relation to Van Pool.

Meeting with Commission

Strict enforcement of the pipe line or common purchaser antidiscrimination law was sought of the Railroad Commission Saturday by the independent oil producers, and the indications are this will be the course of the commission, following the start of the new proration period November 26 under nominations of 680,238 bbls. during the 60-day period. This will be incorporated in orders issued early next week. Pipe line action will come later.

P. O. Settle, of the Gulf company, reiterated the statements of previous hearings that the Gulf company does not admit the commission has jurisdiction in any of these matters and that it is not a common purchaser of oil. He made specific objections to each of the proposals of proration and pipe line law declarations, and declared they were without the jurisdiction of the commission.

The commission requested all statements in support of the prorations be made under oath, which included testimony by Mr. Penn, chairman of the central proration committee, and David Donoghue, its technical adviser.

Mr. Penn and Mr. Donoghue presented the statements agreed to at Friday's conference, basic figures for the proration, and the gist of the resolutions calling on the commission to enforce the pipe line law to the letter, that the nominations of takings be raised from three districts, Panhandle, North and West Central, that inequalities be cured with no discriminations in takings and that pipe lines be forced either to exchange connections or the actual oil to the end that ratable takings be enforced without exception. Mr. Penn said the time for talk had passed and that the commission should enforce the common purchaser act.

Situation Analyzed

Mr. Penn said the committee feels that much good was done during the 90-day proration period about to expire and that the commission's regulations had been more than 99 per cent complied with. Of 1,500 operators in Texas, only three had refused to co-operate, or less than one-half of 1 per cent. He said there has been a reduction in the demand for crude and that inequalities have developed in some districts, but that with co-operation the situation would work out satisfactorily. He said proration is the salvation of the oil industry in Texas and that it must be enforced and respected or ruin will come. Most of the producers realize this, he said, and are attempting to make the best of a bad situation, made worse by the withdrawal of nominations, such as that by the Prairie company.

Mr. Penn asked the committee to take "rigorous steps" to prevent the waste of gas in the fields and said the oil men had formally indorsed the commission's action along that line as well as the survey to determine the wastage. He said that wells outside prorated areas should not be allowed to produce more than 500 bbls., as recommended by the conference, and that any wildcat or extension wells, except offsets, be limited to 50 bbls. daily for 90 days after coming in. These will be considered at special hearings later.

Mr. Donoghue said the Texas daily potential yield by gauge is 7,000,000 bbls. but that he thought not more than 1,800,000 bbls. actually could be produced with the facilities at hand. There are 145,000,000 bbls. of crude and refined products in storage in Texas, of which 120,000,000 bbls. is crude. Evaporation is 3 per cent annually, coming mostly during the first three or four months and producing great waste. The daily United States market is 2,250,000 bbls. and with the great storage, water encroachment, fire hazards, insurance and other factors the waste is immense. Unequal takings result in underground waste as do 100 per cent runs from one lease with the adjacent lease shut down. Equal takings in fair proration stops this waste.

Sectional Protests

Maj. John Gholson pleaded for help for the West Central and North Young County fields at 31,000 bbls. while John E. Kilgore asked that North Texas proration be made flexible with a limit of 62,600 bbls. daily, as was the pipe line runs of November 8. He offered other pipe line totals to show that is a fair figure. A protest was made by the Kewanee Oil Co. against prorating in northern Cooke County.

Beeman Strong, for the Yount-Lee company, protested any rule that will limit the individual well output, especially at Barbers Hill. Mr. Penn asked that all special adjustments be kept in force pending any necessary hearings and on his suggestion a motion was adopted asking the Darst Creek operators to get together and not endanger the industry, now in a precarious condition.

Tubing at Big Lake

That the Railroad Commission had ordered the Big Lake Oil Co. and the Continental Oil Co. "to do the impossible" in shutting down within a 15-day period seven deep wells in Reagan County to prevent waste of gas was before the commission, when representatives of the two companies sought an extension of the time limit. The original order was issued October 30 and directed the work be done by November 15.

C. L. Black, attorney for the Big Lake Co., told the commission had ordered the two companies to accomplish the impossible either in tubing the wells or shutting them down within 15 days. He based his statement on evidence of engineers that the high pressure of the wells makes it dangerous to attempt to shut them down in their present condition. He said the two companies had interpreted the order to mean they should complete the work as quickly as possible and to that end the companies had met the commission more than half way. Witnesses previously had testified, in answering a hypothetical question by Chairman Neff, that all wells in the field could be shut down without injury to the field, but direct testimony showed two of the wells could not be shut down and in that condition it would injure the field to shut down any of them.

C. L. Wharton of Houston, attorney for the Continental Oil Co., told the commission that as rapid progress as possible was being made in tubing the wells and that it was on this understanding the companies were working. Mr. Neff said he interpreted the order that the companies were to shut down the wells or tube them, and in either case the reduction of the waste of gas should be completed by November 15. Mr. Wharton said the oil companies were doing all that was possible and if such a point had been made clear at the time of the order the companies would have resisted the order through court action.

Cost of Tubing

Charles E. Beyer of Texon, engineer for the Big Lake company, testified that the cost of tubing that company's four wells below the 8,500-foot horizon would approximate $50,000, that tubing for one well had been ordered prior to the order of the commission and that since the order everything possible had been done to expedite the work, but that at least 30 days more were needed to do the work.

E. F. Griswold, engineer for the Continental, explained in detail the work of tubing the wells, explaining that the danger of cratering exists and that if one of the seven deep wells in the field cratered, the entire field would either be impaired or ruined. The gas pressure of 3,200 pounds per square inch in the wells is not exceeded by any well, he declared. Danger of loss exists of both life and property of the company and of the University of Texas, which has a one-eighth royalty in the wells.

PRAIRIE CURTAILING ITS PURCHASES OF OIL

(Continued from Page 29)

12,000 bbls.; and the Derby Oil Co.'s gathering system connected to its loading rack is connected to its own wells only and the same may be said of the Sinclair gathering system. Altogether there is a possible outlet for over 46,000 bbls. per day by pipe line and tank car. All the production in the field has been taken by these companies.

Prairie Withdraws as Buyer

Last week the Sinclair Oil & Gas Co. announced that it would run 2,500 bbls. of its own production. The Sinclair Oil & Gas Co. is credited with a potential production of 13,000 bbls. per day. Its allotment under the 3 per cent schedule would have been 390 bbls. of its own production. To run 2,500 bbls. a day meant that it would take 19 per cent of its own potential. On Saturday the Prairie Oil & Gas Co. which had earlier announced its withdrawal as a purchaser in the Panhandle Field in Texas and its intention to take only 3,000 bbls. a day from the Oklahoma Field instead of 15,000 bbls. a day, threw a bombshell into the Voshell Field by withdrawing as a buyer in that pool. The company announced that it would run 19 per cent of its own potential production there.

A recent pipe line and production report on the Voshell Pool showed that in reality the companies shipping oil out of the field were averaging a take of about 6,546 bbls. per day or nearly 10 per cent of the rated potential. The Prairie Pipe Line Co. connected to 10 leases was running and shipping 2,430 bbls. a day; the Skelly Oil Co., 499 bbls. a day from two leases; Shell Pipe Line Corp., 1,509 bbls. from eight leases; Derby Oil Co., 821 bbls. from its own lease, and Sinclair Oil & Gas Co., 1,286 bbls. from its own leases.

The Barnsdall Oil Co., Mid-Kansas Oil & Gas Co., Gypsy Oil Co., Indian Territory Illuminating Oil Co., Independent Oil & Gas Co., E. W. Marland, Inc., McBride, Inc., Slick, Pryor & Lockhart, and Empire Oil & Refining Co. are the producers in the field with no pipe line outlets of their own. They must depend on the five others, the Prairie, Skelly, Shell, Derby and Sinclair companies for an outlet. The Prairie, Shell and Skelly companies have been the only purchasers thus far, Sinclair and Derby companies being content to take their own crude of which they have a sufficient potential supply to fill their needs.

Will Store No More Oil

The action of the Prairie Oil & Gas Co. in withdrawing as a purchaser leaves some of the companies flat, so to speak, but the Prairie has an excellent excuse. It has decided not to store any more oil and its purchases, together with its own production, even under proration, have overbalanced its sales to refiners, thus making it necessary to add to its already large volume of stored crude oil, which has reached a total of about 60,000,000 bbls. It appears to have reached a decision to handle its own production in accord with the usage in the various pools in which such production lies, but to cut off its purchases where such purchases involve running crude to storage. It cut off about 12,000 bbls. in runs from Oklahoma City; 8,500 bbls. in runs from the Texas Panhandle and its recent proration order in Kansas, together with its more recent decision as regards Voshell has cut its Kansas runs 5,000 bbls. a day, altogether reducing its take of oil in the Mid-Continent by 25,000 bbls. a day.

For more than a quarter of a century the Prairie Oil & Gas Co. has bought oil in the Mid-Continent in good season and bad. It could always be depended on to connect with any lease within reach of its lines and it gave producers a service without stint. In consequence of this generous policy it has been forced to accumulate more and more stocks until now it has more oil aboveground than any other company in the world.

A Report Denied

It has been persistently rumored during the past week that the Sinclair Oil & Gas Co. had made arrangements to ship 40,000 bbls. of crude per day through the Prairie pipe lines to the Sinclair refineries in the Kansas City and Chicago districts now being served through the Stanolind pipe line (formerly the Sinclair pipe line). The rumor is denied by C. E. Crawley, vice president of the Sinclair Consolidated Oil Corp.

Prairie Expansion Rumors

The collapse of the negotiations between the Prairie Oil & Gas Co. and the Sinclair Consolidated Oil Corp., which had been discussing the matter of a merger for over a year has given rise to the thought that the Prairie company will add a refining and marketing organization to its producing and pipe line systems. The company has the money and the oil and the means of transportation and its pipe line traverses an area in which a refining and marketing organization could be advantageously established and in which it could become a serious competitor. The Prairie company is putting out nothing as to its future plans any more than to assure questioners that it is not remaining static and as one official said it is "in there playing ball," but it would be no surprise if the company would in the course of time confirm the rumors that it is to round itself out into a fully integrated company.

MARKET STRONGER IN LOUISIANA-ARKANSAS

SHREVEPORT, La., Nov. 24.—Increasing demand for gas oils and fuel have strengthened the market for those products in this division but not to the extent of causing an increase in price. Kerosene is firmer in tone with one refiner quoting 4⅜ cents, an advance of an eighth from last week's price. Gasoline is unchanged at 6¼ to 6½ cents with a somewhat firmer market. Refiners are gaining confidence in the idea that any changes in the market will be upward and while there has been talk of the possibility of another crude cut they do not feel that it will necessarily affect refined prices.

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 125)

Column 5—Price change posted by Standard of California September 16.
Column 6—Oil below 14 gravity posted at 45 cents.
Column 8—Posted by General Petroleum Co.
Kettleman Hills—Union Oil Co., September 22, 35 to 39 gravity, $1.10; 40 to 44 gravity, $1.20; 45 to 49 gravity, $1.35; 50 to 54 gravity, $1.50; 55 gravity and above, $1.65. Standard Oil Co. of California, 55 gravity and above, $1.65.

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated.)

NORTH LOUISIANA

AVOYELLES PARISH

Company, farm and location— Remarks—

Gas-Con Oil Corp.'s No. 1 Morrow (no check), Sec. 14-2s4e ... S.D. sand and shale 4,220 ft.

R. E. Tippett's No. 1 Chateline, NE NE, Sec. 34-1n-3e ... Cored S.W. sand 3,140-47 ft; S.D. 3,410 ft.

BIENVILLE PARISH

Carter & Dobbs' No. 1 White, 330 ft. N, 330 ft. W, SE cor. SE SE, Sec. 9-18-6 ... S.D; W.O. 2,262 ft.

Coyle Bros.' No. 1 Lawhon, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-8 ... Rig up.

W. A. Nichols et al's No. 1 McDermott, 660 ft. S, 660 ft. W, NE cor. NE NE, Sec. 28-18-6 ... Whipstocked 6⅝-in. 2,055 ft; cored gummy shale 2,156 ft; old T.D. 3,360 ft.

S. P. Borden's No. 1 Thomas, 330 ft. S, 330 ft. E, NW cor., Sec. 27-16-9 ... Coring 4,685 ft.

Olds & Smith's No. 1 Brice, 330 ft. N, 330 ft. E, SW cor. SE SE, Sec. 15-18-6 ... Sandy shale showing oil 2,230 ft; cmtd. 6-in. 2,156 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14 ... D.S. test 1,546 ft; S.W; S.D; W.O.

Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13 ... Cmtd. 12½-in. 44 ft; drlg. 1,010 ft.

CADDO PARISH

Tex.-La. Prod. Co.'s No. 1 French, 1,210 ft. N, 675 ft. E, SW cor. NW, Sec. 34-23-16 ... Drlg. hard lime 4,683 ft.

Tex.-La. Prod. Co.'s No. 1 Wall, 2,175 ft. N, 1,980 ft. W, SE cor., Sec. 33-23-16 ... Drlg. red shale and lime 3,770 ft.

CALDWELL PARISH

Hudson et al's No. 1 Burton, Sec. 35-12-2e ... S.D. 2,230 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMillen, 70 ft. N, 100 ft. W, C, Sec. 26-9-6 ... Arranging to cmt. 8-in. 2,850 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7 ... S.D. 2,200 ft.

Baugh et al's No. 1 Alexander, 330 ft. S, 330 ft. W, NE cor., Sec. 27-20-8 ... S.D. 2,200 ft.

Prairie O. & G. Co.'s No. 1 Shackelford, 331 ft. S, 327 ft. E, NW cor. SE NE, Sec. 30-23-5 ... Began drlg. Nov. 17; cmtd. 12½-in. 611 ft.

CONCORDIA PARISH

Joe Marr et al's No. 1 Maxwell, C. Sec. 35-3n-8e ... Drlg. 3,430 ft.

DE SOTO PARISH

Ark.-La. P. L. Co.'s No. 3 Johnson, 1,980 ft. N, 1,320 ft. W, SE cor., Sec. 1-11-14 ... D.S. test 3,090 ft; dry; drlg. 3,-100 ft.

J. W. Clark's No. 1 Tidwell, 250 ft. S, 250 ft. E, NW cor. NW, Sec. 22-13-14 ... Small show oil 3,084 ft; S.D.

S. A. Guy's No. 1 Dowling Bros., 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14 ... S.D; sandy shale 1,354 ft.

Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11 ... S.D. 1,060 ft.

Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15 ... S.D. wtr. 1,650 ft.

C. D. Neff et al's No. 1 H. P. Dowling, 240 ft. N, 240 ft. W, SE cor., Sec. 13-13-14 ... Began drlg. Nov. 6; cmtd. 10-in. 42 ft.

LA SALLE PARISH

La. G. & F. Co.'s No. 2-B Tensas, 1,980 ft. W, 1,321 ft. S, NE cor., Sec. 23-7-4 ... Location.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10 ... Washing to bottom; T.D. 3,600 ft.

J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10 ... D.S. test 1,557 ft; dry; drlg.

Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10 ... Fishing 600 ft; D.S; T.D. 1,150 ft.

Gulf Ref. Co.'s No. 1 Bodcaw, 1,910 ft. S, 605 ft. W, NE cor., Sec. 13-13-8 ... Rig up.

RED RIVER PARISH

Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 33-12-10 ... Coring 2,870 ft.

T. G. Shaw's No. 1 Wilkerson, 460 ft. N, 200 ft. W, SE SE, Sec. 4-12-10 ... Hole clean; arranging to bail; 1,-700 ft. oil in hole; T.D. 2,838 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ... Derrick.

W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-17 ... Derrick.

Island Gas Co.'s No. 1 Noe, 1,902 ft. N, 660 ft. W, SE cor., Sec. 2-16-5 ... Top Monroe gas rock 2,365 ft; bailed dry 2,419 ft. and 2,460 ft; D.S. test 2,479 ft., 2,509 ft. and 2,539 ft; S.W; 2,560-96 ft. S.W; S.D. 2,630 ft.

Pelican Nat. Gas Co.'s No. 1 Faust Bros., 1,980 ft. E, 660 ft. N, SW cor. NW, Sec. 13-17-5 ... Drlg. 2,050 ft.

SABINE PARISH

Boone trustee's No. 1 Turner, 40 ft. N, 140 ft. W, SE cor. NW NW, Sec. 4-7-11 ... Rig up.

J. W. Clark's No. 1 Lites, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11 ... Derrick.

Tom David's No. 1 Smith, 460 ft. N, 200 ft. W, SE cor. SE SE, Sec. 27-8-10 ... Drlg. sticky lime 2,165 ft.

Eylers O. & G. Co.'s No. 1 Frazier, 330 ft. S, 330 ft. W, NE cor. NW SW, Sec. 10-8-11 ... Cmtd. 10-in. 106 ft; drlg. 1,500 ft.

Franks et al's No. 1 Dew, 200 ft. N, 300 ft. E, SW cor. SE, Sec. 22-8-11 ... S.D. wtr. 1,325 ft.

R. L. Gay, tr.'s No. 1-A Sabine Lbr. Co., 212 ft. S, 170 ft. E, NW cor. SE NW, Sec. 1-7-12 ... Rig up.

Lacy Jessup Oil Co.'s No. 1 Brown Lbr. Co. (was Lacey et al's), C NW NE, Sec. 28-8-10 ... Drlg. 1,750 ft.

Lacey Prod. Co.'s No. 1 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 30-8-11 ... Began drlg. Nov. 12; cmtd. 10-in. 100 ft; drlg. 1,400 ft.

Lacey Prod. Co.'s No. 2 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 32-8-12 ... Derrick.

Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11 ... Top marl 2,395 ft; cmtd. 6-in. 2,-385 ft; T.D. 2,407 ft; tested dry 2,412 ft; 100 ft. oil in hole from 2,422 ft; D.S. test dry; show oil and gas 2,800 ft; tested dry.

D. M. Lide's No. 1 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor., Sec. 12-7-12 ... Rig up.

Lohman & Walker's No. 1 Hubley, 330 ft. N, 330 ft. W, SE cor. SE NE, Sec. 21-7-11 ... Top marl 2,461 ft; cmtd. 6-in. 2,-465 ft; tested dry 2,490 ft; C.O.

Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11 ... Rig up.

Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E, C, NE, Sec. 31-9-12 ... Rig up.

McDaniel & Lieber's No. 2 Batson, 480 ft. S, 220 ft. E, NW cor. SW SE, Sec. 16-8-12 ... D.S. test 2,440 ft; dry; fishing D. S. 2,460 ft.

Frank Melat, Inc.'s No. 1 Sabine Lbr. Co., 330 ft. N, 330 ft. E, SW cor. SW SW, Sec. 6-7-11 ... Location.

Frank Melat, Inc.'s No. 2 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. NE NW, Sec. 14-7-12 ... Location.

Merritt et al's No. 1 La. Long Leaf Lbr. Co., S½ NE NE, Sec. 33-8-11 ... Waiting on csg; T.D. 2,345 ft.

Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12 ... Small show oil 2,580 ft.

Pelican Nat. Gas Co.'s No. 6 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor. NE NE, Sec. 11-7-12 ... Began drlg. Nov. 12; cmtd. 12-in. 103 ft; drlg. 891 ft.

D. H. Riddick's No. 1 Scretchfield, 400 ft. E. 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ... Made 30-ft. hole 3,280-3,310 ft; S.D.

C. W. Robinson's No. 1 Tramwell, 300 ft. W, 200 ft. N, SE cor. NE NE, Sec. 5-7-11 ... Location.

A. H. Tarver, trustee's No. 1 Baker, 330 ft. S, 330 ft. E, NW cor. NE, Sec. 36-8-12 ... Rig up.

A. H. Tarver, trustee's No. 2 Baker, Sec. 36-8-12 ... Location.

Toteco Oil Co.'s No. 1 La. Long Leaf Lbr. Co., 325 ft. S, 100 ft. W, NE cor. NW, Sec. 18-6-12 ... Drlg. shell and lime 4,137 ft.

Triangle Pet. Co.'s No. 1 Sabine Lbr. Co. (was R. B. Whittle's), 330 ft. N, 330 ft. E, SW cor. SE SW, Sec. 36-8-12 ... Derrick.

Wilson & Son's No. 1 Gandy-Garrett, NW SW, Sec. 4-5-12 (portable rig) ... Drlg. 1,740 ft.

John Woodley's No. 1 Sabine Lbr. Co., 400 ft. S, 330 ft. W, NE cor. SE, Sec. 12-8-12 ... Location.

TENSAS PARISH

Seip et al's No. 1 Fowler, C SW NE, Sec. 10-10-10 ... S.D. 905 ft.

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ... Reamed to bottom; S.D. 2,780 ft

WEBSTER PARISH

Coyle, trustee's No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ... Derrick.

Girard Oil Co.'s No. 1 R. H. Miller, 330 ft. S, 990 ft. W, C, Sec. 16-18-10 ... Rig up.

ARKANSAS

CHICOT COUNTY

H. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 31-18-3 ... Fishing; T.D. 2,925 ft.

CLEBURNE COUNTY
(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ... Milling out junk 3,640 ft.

CLAY COUNTY

S. C. Jeffries, trustee's No. 1 Underwood, 510 ft. N, 350 ft. W, C NW SE, Sec. 4-20-8 ... Tested estimated 1,000,000 ft. gas 280 ft; cmtd. 10-in. 305 ft; S.D 330 ft.

COLUMBIA COUNTY

J. W. Olvey et al's No. 1 Kate George, 200 ft. N, 245 ft. E, SW cor. NW SW, Sec. 29-18-20 ... Drlg. 3,010 ft.

FRANKLIN COUNTY

Red Bank Oil Co.'s No. 1 Hamm, 660 ft. N, 660 ft. E, C, Sec. 33-10-6 ... O.W.D.D; completed Oct. 8; estimated 6,500,000 ft. gas; 775 lbs. rock, 3,750 ft; waiting on cmt to run tubing; T.D. 3,750 ft.

GARLAND COUNTY
(Cable tools)

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-8-19 ... Cmtng. 5 3/16-in. 3,756 ft.

HOT SPRINGS COUNTY

Anisman et al's No. 1 Hinson est., NE NE, Sec. 19-4-16 (portable rig) ... Drlg. 1,375 ft.

John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ... Cmtd. 12½-in. 42 ft; S.D. 110 ft.

LAFAYETTE COUNTY

McIver et al's No. 1 Hottle, NW cor. NE, Sec. 1-20-6 ... Began drlg. Nov. 8; S.D. 21 ft.

LINCOLN COUNTY

B. F. Thompson, trustee's No. 1 McGhee, 330 ft. S, 150 ft. W, C, Sec. 8-8-7 ... Rigging up.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 ... S.D. 2,502 ft.

LOGAN COUNTY

Ark.-La. P. L. Co.'s No. 1 Jno. Jansen, 350 ft. S, 455 ft. E, NW cor. NE NE, Sec. 35-8-24 ... Drlg. hard sand 260 ft.

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ... U.R. 5 3/16-in. 3,570 ft; T.D. 3,-610 ft.

MADISON COUNTY
(Cable tools)

J. W. Baxter's No. 2 Hallin, C, Sec. 17-16-25 ... T.A. 405 ft.

J. W. Baxter's No. 3 Hallin, NE SW, Sec. 1-17-26 ... Began drlg. Nov. 10.

MILLER COUNTY

Bullock Oil Co.'s No. 1 Hervey, SE NE, Sec. 33-14-26 ... Drlg. 2,280 ft.

East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 2-15-26 ... 2-ft. sand 888 ft. dry; S.D; W.O. 900 ft.

E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 36-15-26 ... D.S. test 2,804 ft; 500 bbls. S.W; 10 bbls. oil; flowed 125 bbls. fluid 10% oil, 2,814 ft; set short string 4½-in. 2,985 ft; 2-ft. sand showing oil; D S test S.W; setting full string 4½-in.; T.D. 2,-961 ft.

Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 33-15-26 ... Began drlg. Oct. 13; cmtd. 10-in. 93 ft.

Lenz et al's No. 2 Johnson, SE cor., Sec. 24-15-16 ... Coring 3,100 ft.

Lenz et al's No. 3 Johnson, 250 ft. W, 150 ft. N, SE cor. NE NW, Sec. 24-15-26 ... Drlg. 2,100 ft.

Salzer & McRae's No. 1 Rose, SW cor. NE NW, Sec. 9-16-26 ... S.D. fuel 475 ft.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17 ... Fishing drill bit and collar; T.D. 2,907 ft.

Copenhaven et al's No. 1 Elliott, Sec. 11-15-17 ... S.D. repairs 1,460 ft.

Graves Bros.' No. 1 Walker, 350 ft. N, 280 ft. E, SW cor., Sec. 9-14-18 ... Pumping 50 bbls. fluid 90% wtr. 1,873 ft; arranging to deepen.

A. H. Turner, trustee's No. 1 Dave Brown, 220 ft. N, 220 ft. E, SW cor., Sec. 23-15-18 ... Drlg. 1,910 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ... Drlg. hard lime 1,831 ft.

E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ... Derrick.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21 ... Drlg. shale 2,250 ft.

SCOTT COUNTY

Ark. Valley Gas Co.'s No. 1 Turner, C SE, Sec. 27-5-30 ... Location.

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ... Sidetracking tools 1,436 ft; T.D 1,540 ft.

SEBASTIAN COUNTY

Lavaca O. & G. Co.'s No. 1 Davis, C NW NE, Sec. 29-8-30 ... Drlg. 2,525 ft.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ... Drlg. 2,604 ft.

H. L. Hunt's No. 5 Swilly, 330 ft. S, 330 ft. W, NE cor., Sec. 28-16-16 ... W.O.S.R; 2,000 ft. fluid; T.D. 2,-689 ft.

H. L. Hunt's No. 6 Swilly, 330 ft. N, 330 ft. W, SE cor., Sec. 21-16-16 ... Began drlg. Nov. 11; cmtd. 12½-in. 102 ft; drlg. 1,015 ft.

Marine Oil Co.'s No. 5-A Thompson, 330 ft. S, 330 ft. W, NE cor. SW NE, Sec. 10-18-13 ... Drlg. 2,900 ft.

Marine Oil Co.'s No. 1-F Winn, Sec. 10-18-13 ... Hole full fluid 50% S.W; waiting on air; T.D. 3,604 ft.

Oil Field Corp.'s No. 1 Simmons, 330 ft. S, 330 ft. E, NW cor., Sec. 13-18-13 ... Coring 3,553 ft.

VAN BUREN COUNTY

Glenn Kohle et al, trustees' No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ... S.D. 50 ft.

WASHINGTON COUNTY
(Cable tools)

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 ... S.D; W.O. 602 ft.

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ... S.D. 1,697 ft.

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 39-15-32. U.R. 8-in. to T.D. 1,500 ft.
H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29. Drlg. 1,400 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21.....S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Joe Burnham et al's No. 1 No. 1 G. W. Burnett, 150 ft. W, 400 ft. S, NE cor. G. W. Burnett 76 ac., in W. H. Janes Sur. .....Base Austin chalk 3,095 ft; top red beds 3,145 ft; S.D. 3,150 ft.

Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E, SE cor. G. W. Hardige 100-ac. tr. on Floyd Merritt tr. in Y. S. McKinney Sur. .....Began drlg. Nov. 7; cmtd. 10-in. 84 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr., in J. H. Murphy Sur. ..... Cored sand 3,510-10 ft; drlg. 3,-600 ft.

CASS COUNTY

Wesley Morse et al's No. 1 Henderson, 800 ft. E., 1,-100 ft. S, NW cor. C. E. Bailey Sur. ..... Derrick.
Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E. SW cor., J. A. Stephenson Sur. .....Top chalk 1,935 ft; drlg. 2,000 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ....S.O; waiting csg. 2,218 ft.
The Texas Co.'s No. 1 Citizens State Bank, 2,793 ft. W, 300 ft. S, NE cor., Jas. Watkins Sur. .....Drlg. shale 3,438 ft.

MARION COUNTY

P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur. .....Claim 5-ft. core showing oil 1,-884 ft; S.D. waiting for 8-in. csg.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. ....S.D. 2,865 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. ....Swedging 2 joints collapsed 8-in; arranging to cmt. 6⅝-in. and packer 2,182 ft.

SABINE COUNTY

Benedum & Trees Oil Co.'s No. 1 Nona Mills Lbr. Co., Jas. Mason Sur. .....Arranging D.S. test 4,278-96 ft; lime and shale.

SHELBY COUNTY

Chapparell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ..T.A. hard lime 3,350 ft.
G. R. Ridgeway's No. 1 G. D. Parker, 4,980 ft. E, 750 ft. N, SW cor., Jessie McKelvey Sur. .....Drlg. chalk 2,970 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Rotary operations unless otherwise designated.)
NORTH LOUISIANA
BOSSIER PARISH—BELLEVUE

La. Oil Ref. Corp.'s No. 14-B Bodcaw, 450 ft. W, 330 ft. S, NE cor. SE SW, Sec. 11-19-11 .....D.S. test 2,044-63 ft; 2 joints mud and little gas; 2,180 ft., 5 thribbles S.W; coring 2,190 ft.

H. I. Morgan's No. 11-B Kendrick, 200 ft. N, 600 ft. E, SW cor. NE SW, Sec. 22-19-11 .....Began drlg. Nov. 19.

BOSSIER PARISH—CARTER

Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor., Lot 17, in Lot 16, Sec. 31-23-11 .....Hole full oil; W.O.S.R; 15 ft. broken sand; T.D. 3,217 ft.

Palmer Corp.'s No. 1 Johnson, 660 ft. S, 660 ft. W. NE cor., Sec. 24-17-12 .....O.W.D.D; rig up; T.D. 887 ft; completed Oct. 22, 1929; 23,885,-000 ft. gas; drlg. sandy shale 2,473 ft.

Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E. SW cor. NW NE, Sec. 26-23-12 ..... Derrick.
The Texas Co.'s No. 1 Pine Wood Lbr. Co., 1,650 ft. S, 300 ft. E, NW cor., Sec. 25-28-12 ..... Swbng. 10 bbls. oil and 7 bbls. S.W. 3,152 ft; W.O.S.R.

Tippett Drlg. Co.'s No. 3 Holmes, 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 36-23-12 ..... 300 ft. oil in hole; waiting on power; T.D. 3,130 ft.

BOSSIER PARISH—ELM GROVE

R. O. Roy's No. 1 Hunter, 660 ft. N, 660 ft. E, SW cor., Sec. 24-16-11 ..... Drlg. 2,067 ft.

BOSSIER PARISH—SLIGO

Palmer Corp.'s No. 1 Schnitt, 660 ft. S, 660 ft. E, C, Sec. 14-17-12 .....O.W.D.D; arranging to deepen 877 ft.

Woodley Pet. Co.'s No. 4 Harris, 247 ft. E, 440 ft. N, SW cor. SE NE, Sec. 14-17-12 .....Cmtd. 8i-n. 1,695 ft.
Woodley Pet. Co.'s No. 1 Shepard, SE SW, Sec. 14-17-12 Location.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16 ..... Location.
Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,310 ft. S, 970 ft. E, NW cor,, Sec. 17-16-16 ..... Location.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 5 Barr, Sec. 30-22-15 .....Cmtd. 6-in. 1,077 ft; W.O.S.R. 1,-121 ft.

CADDO PARISH—OIL CITY

The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16.....Location.
The Texas Co.'s No. 74 Levee Board, 1,600 ft. S, 200 ft. W, NE cor., Sec. 33-21-16 .....Began drlg. Nov. 18; cmtd. 12½-in. 86 ft.
The Texas Co.'s No. 75 Levee Board, 2,450 ft. S. 224 ft. W, NE cor., Sec. 33-21-16 ..... Derrick.

CLAIBORNE PARISH—HOMER

La. Oil Ref. Corp.'s No. 10 Langston, 660 ft. S, 528 ft. E, NW cor. SW SW, Sec. 19-21-7 .....Began drlg. Nov. 14; cmtd. 12½-in. 226 ft.

CLAIBORNE PARISH—SUGAR CREEK

Triangle Drlg. Co.'s No. 1 Brownfield, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 6-19-5 .....Drlg. anhydrite 4,114 ft.

DE SOTO PARISH—HOLLY

Standard Oil Co.'s No. 1-B Dowling Bros., 200 ft. N, 396 ft. W, SE cor. SW SW, Sec. 32-14-13 .....Drlg. 2,150 ft.

LA SALLE PARISH—URANIA

Montugu Oil Co.'s No. 9 Zenoria Lbr. Co., 660 ft. W, 200 ft. S, NE cor., Sec. 10-9-1e .....Began drlg. Oct. 15; cmtd. 10-in. 103 ft; 6-in. 1,491 ft; W.O.S.R. 1,508 ft.

Montugu Oil Co.'s No. 10 Zenoria Lbr. Co., 160 ft. S, 160 ft. E, NW cor., Sec. 11-9-1e ..... Derrick.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4 ..... Location.
La. G. & F. Co.'s No. 3 Sandige (was Industrial Gas Co.'s), 560 ft. N, 660 ft. E, SW cor. SE, Sec. 15-20-4..Drlg. 2,122 ft.
Texas-La. Prod. Co.'s (was Moody-Seagraves Gas Co.'s), No. 1 Fisher, 660 ft. E, 3,814 ft. N, SW cor., Sec. 34-21-5 .....D.S. test 2,393 ft; dry; 2,350-2,421 ft. dry; 2,421-64 ft. S.W; S.D.

OUACHITA PARISH

Bahan & Bahan's No. 1 Fabolio, 660 ft. S, 660 ft. W, NE cor., Sec. 35-19-3 .....Location.
La. G. & F. Co.'s No. 4 fee (was Industrial Gas Co.'s), 1,334 ft. N, 652 ft. W, SE cor., Sec. 2-19-3 .....Began drlg. Nov. 12; cmtd. 12½-in. 156 ft; 9-in. 807 ft.
Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4 .....Location (reported drlg. in error)
Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4 .....Drlg. 2,000 ft.
Pipes & Mack's No. 1 Robertson & Reed, 990 ft. W, 330 ft. S, NE cor. SE, Sec. 10-18-4 .....Cmtd. 6-in. 2,165 ft.
Pipe & Mack's No. 2 Union Gas Products Co., 296 ft. W, 528 ft. N, SE cor. SW, Sec. 7-18-5 .....Location.
United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 .....Location.

RICHLAND PARISH

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 .....Rig moved; derrick.
Franklin O. & G. Co.'s No. 1 Thompson, 660 ft. N, 165 ft. W, SE cor. NE, Sec. 14-16-6 .....Location.
Hope Prod. Co.'s No. 1 Thomason, 1,980 ft. N, 660 ft. E, SW cor., Sec. 14-16-6 .....Cmtd. 6⅝-in. 2,285 ft.
La. G. & F. Co.'s No. 1-A Noble, 1,320 ft. N, 580 ft. W, SE cor. NE, Sec. 35-16-5 .....Cmtd. 6-in. 2,300 ft.
Palmer Corp.'s No. 1 Holdiness, 552 ft. S, 2,215 ft. W, NE cor., Sec. 8-16-6 .....Began drlg. Nov. 12; cmtd. 12½-in. 160 ft; 9-in. 840 ft.

Palmer Corp.'s No. 13 Rhymes-England, 561 ft. W, 66 ft. N, SE cor., Sec. 29-17-6 .....Cmtd. 6-in. 2,300 ft.
Southern Carbon Co.'s No. 1 J. A. Clements, 1,320 ft. S, 1,980 ft. W, NE cor., Sec. 10-16-6 .....Cmtd. 6-in. 2,285 ft.
Southern Carbon Co.'s No. 1-B Hale, 1,320 ft. N, 660 ft. E, SW cor., Sec. 15-16-6 .....Location.
Southern Carbon Co.'s No. 1-C Hemler, 1,164 ft. S, 888 ft. W, NE cor., Sec. 14-16-6 .....Drlg. 2,170 ft.
Southern Carbon Co.'s No. 1-D M. and M. McCoy, 1,980 ft. S, 660 ft. W, NE cor., Sec. 30-16-6 .....Location.
Southern Carbon Co.'s No. 7 F. B. and E. A. Sartor, 2,540 ft. S, 660 ft. E, NW cor., Sec. 17-16-7 .....Location.
Southern Carbon Co.'s No. 1-C Thomason, 1,980 ft. N, 1,400 ft. W, SE cor., Sec. 14-16-6 .....Cmtd. 6-in. 2,285 ft.
Southern Carbon Co.'s No. 1-E Thomason, 3,300 ft. S, 100 ft. E, NW cor., Sec. 32-16-6 .....Location.
State Line O. & G. Co.'s No. 1-A Boughton, 1,883 ft. E, 127 ft. S, NW cor. SW, Sec. 33-16-6 .....Cmtd. 6-in. 2,300 ft.
State Line O. & G. Co.'s No. 1 Hewitt, 1,721 ft. S, 957 ft. E, NW cor. SW, Sec. 32-16-6.....Began drlg. Nov. 12; cmtd. 12-in. 158 ft; 9-in. 882 ft.

United Carbon Co.'s No. 1 J. A. Hemler, 660 ft. W, 660 ft. N, SE cor., Sec. 5-16-6 .....Drlg. 1,975 ft.
United Carbon Co.'s No. 2 C. M. Noble, 805 ft. W, 1,498 ft. N, common cor. Secs. 7, 8 and 38-15-16 in Sec. 37..Cmtd. 6-in. 2,285 ft.

SABINE PARISH—PLEASANT HILL

F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, SW cor., Sec. 27-10-12 .....Cmtd. 6-in. 2,945 ft.

SABINE PARISH—ZWOLLE

W. M. Coates' No. 1 Sabine Lbr. Co., 424 ft. N, 424 ft. E, SW cor. NW NW, Sec. 1-7-12 .....Cmtd. 6⅝-in. 2,185 ft.
Tom Davis' No. 1 Holliday (was T. D. Allison's), Sec. 31-8-12, Zwolle Townsite .....S.D. wtr. 1,350 ft.
F. M. Hood's No. 1-B Winston (was No. 2), 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle Townsite ....S.D. 1,065 ft.
Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 33-8-12 .....Rig up.
Pelican Nat. Gas Co.'s No. 6 La. Long Leaf Lbr. Co., 200 ft. N, 200 ft. W, SE cor. NW SW, Sec. 4-7-11..Drlg. 1,490 ft.
H. W. Perritt, trustee's No. 1 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. SW, Sec. 2-7-12 .....Drlg. 2,140 ft.
Standard Oil Co.'s No. 1 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor. SW NW, Sec. 25-8-12 .....D.S. test 2,559 ft; dry; drlg. 2,-616 ft.

C. H. Teat et al's No. 1 Craig, 300 ft. N, 300 ft. E. SW cor. NE NE, Sec. 25-8-12 .....Bailed dry 2,530 ft; W.O.
The Texas Co.'s No. 1 Maines et al. 990 ft. S, 330 ft. W. N cor. SE, Sec. 5-7-11 .....Cmtd. 6⅝-in. 2,283 ft; D.S. test 2,286 ft; dry.

Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 .....S.D. 2,495 ft.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 9 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 18-7-13 .....Show oil and gas 2,234 ft; tested dry; drlg. 2,250 ft.

UNION PARISH

Bahan & Bahan's No. 1 Barr, 233 ft. S, 833 ft. E. NW cor., Sec. 16-20-4 .....Began drlg. Nov. 12; cmtd. 12-in. 160 ft.

E. S. Hall's No. 5 Spencer, 1,980 ft. E, 600 ft. N, SW cor., Sec. 14-20-3 .....Cmtd. 6-in. 2,076 ft.
La. G. & F. Co.'s No. 1 J. W. Hollis, 662 ft. E, 412 ft. N, SW cor. SE, Sec. 10-21-3.....Location.
La. G. & F. Co.'s No. 12 Smith (was Ouachita Nat. Gas Co.'s), 2,152 ft. N, 708 ft. E, SW cor., Sec. 20-20-4....Location.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Magnolia Pet. Co.'s No. 3 Denman, 369 ft. S, 513 ft. W, NE cor. NE NW, Sec. 1-22-11 .....W.O.S.R. 2,741 ft.

ARKANSAS

JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 1 Hudson et al, 660 ft. N, 545 ft. E, SW cor. SE NE, Sec. 14-10-24 .....Drlg. black shale 1,475 ft.
Ark.-La. P. L. Co.'s No. 1 Mattie Kelly, 330 ft. S, 657 ft. E, NW cor. SW SW, Sec. 14-10-24.....Drlg. hard sand 2,885 ft.
River Valley Gas Dev. Co.'s No. 1 W. F. Collier, 350 ft. S, 330 ft. E, NW cor. SE SE, Sec. 21-9-25 .....Began drlg. Nov. 12.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 3 Doyle, 100 ft. E, 400 ft. N, SW cor. SE SE, Sec. 23-15-16 .....Drlg. 1,360 ft.

SEBASTIAN COUNTY

Ozark Nat. Gas Co.'s No. 10 Weaver, 660 ft. N, 660 ft. W, SE cor. SE NE, Sec. 27-8-30 .....Straightening hole 2,640 ft.
Ozark Nat. Gas Co.'s No. 1 Wright, C NW NE, Sec. 29-8-30 .....Began drlg. Nov. 11; drlg. 350 ft.

UNION COUNTY—CHAMPAGNOLLE

Lion Oil Ref. Co.'s No. 1 Sullivan, 330 ft. N, 330 ft. W, SE cor. SE NW, Sec. 12-17-14 .....Drlg. shale 2,700 ft.
Lion Oil Ref. Co.'s No. 2 Sullivan, 933 ft. S, 200 ft. W, NE cor. NE NW, Sec. 12-17-14 .....Drlg. 2,315 ft.
Ohio Oil Co.'s No. 10 Crain, 330 ft. S, 330 ft. W, NE cor. SE SW, Sec. 1-17-14 .....Drlg. 2,610 ft.
Ohio Oil Co.'s No. 11 Crain, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 1-17-14 .....Location.

UNION COUNTY—EL DORADO

Malloy & Co.'s No. 7 Burns, SW cor. NW NW, Sec. 31-17-15 .....Pumping; no gauge; T.D. 2,213 ft.
Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E. NW cor. SW, Sec. 7-17-15 .....Drlg. 1,500 ft.
Weisinger & Boll's No. 3 Goodwin, 175 ft. N, 150 ft. E, SW cor. NE NW, Sec. 6-18-15 .....Arranging test; T.D. 2,175 ft.

UNION COUNTY—SMACKOVER

C. E. Murdock's No. 1-A Vestal, 330 ft. S, 430 ft. E, NW cor. SE NE, Sec. 17-16-15.....Rig up.

EAST TEXAS
HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. .....Location.
Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. .....S.D. brown chalk 3,520 ft.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 2-A G. W. Brumble, 477 ft. W, 473 ft. S, NW cor. Jno. Womack Sur., in B. C. Jordan Sur. .....Drlg. broken lime and anhydrite 4,444 ft.

W. G. Banks et al's No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. .....Rig up.
S. E. Bell et al's No. 1 Burnett Lbr. Co., C. S. B. Hendricks Sur. .....Drlg. lime 2,500 ft.
Creighton & Hart's No. 1 Greeny-Kyle, C, Greeny-Kyle 60 ac., Jas. Tippett Sur. .....Drlg. hard lime 3,160 ft.
Texas-La. Prod. Co.'s No. 1 Baker, 1,000 ft. N, 550 ft. W, SE cor., 63-ac. Baker tr., in B. C. Jordan Sur. ..Drlg. hard lime 2,674 ft.

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HOLDS ITS GAUGE
THAT HAS BEEN BUILT UP WITH
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WHITTIER, CALIFORNIA

Knox et al's No. 1 Dunham (was Jackson et al's), 150 ft. W, 150 ft. N, SE cor. M. I. Dunham 29 ac., in Chas. Haley Sur. ..... Small show oil; cmtd. 6⅝-in. 2,670 ft; T.D. 2,732 ft.

Nat. Gas Prod. Co.'s No. 1 H. H. Alvord, 6,777 ft. S, 6,162 ft. E, NW cor., B. C. Jordan Sur. ..... Cmtd. 10-in. 1,160 ft.

Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor., Jno. Womack Sur. in B. C. Jordan Sur. ..... Derrick.

RUMANIAN CONSERVATION PROGRAM IS ENCOUNTERING DIFFICULTIES

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Nov. 24.—Rumania's conservation program, which got under way November 1 with the definite allotment of production quotas to the principal producers in that country, has already come to grief through notification by Steaua-Romana that it will withdraw from the plan, effective November 30. Steaua's withdrawal is based on the contention that the quota allotted it is unsatisfactory, in view of that company's previous share in Rumanian production.

The test run recently conducted to determine potential production and quotas, directors of Steaua-Romana declared, reacted strongly against the company's interests. During 1928, the company said, it accounted for 15.28 per cent of Rumania's production and in 1929 produced 17.26 per cent of Rumania's total output. In 1928, the company stated, it refined 16.97 per cent of Rumania's total output and in the following year 18.76 per cent. Drilling by Steaua-Romana in 1928 amounted to 18.13 per cent of the total footage drilled in Rumania and in 1929 was 19.64 per cent of the total.

Under these circumstances, the company pointed out, its quota of approximately 12 per cent under the rationalization plan is unsatisfactory, and directors of Steaua-Romana have consequently ordered the company's withdrawal from the compact. The company is in favor of the conservation plan, its statement emphasized, its withdrawal action being based solely on the contention that their allotment, as fixed by the potential production of their wells in the test runs, puts the company in "a highly unsatisfactory position."

Steaua's withdrawal from the proration agreement, it is believed, will cause but a temporary halt in Rumania's conservation program, and it is expected that some form of compromise will be arrived at that will be satisfactory to Steaua-Romana. The form of this compromise, it is added, will probably be reached in the form of more frequent test runs to determine quotas The October test run was designed to fix quotas for the six months' period beginning November 1.

Sales Organization Crisis

Withdrawal of Steaua-Romana from the conservation pact has been paralleled by a similar breakdown in the internal sales organization of the Rumanian oil industry, several producers having notified the organization they will withdraw offering as of December 31, next. Efforts are being made to reach a compromise in this direction as well, and it is believed complete harmony will be secured in domestic sales of fuel oil in Rumania, with individual refiners handling their own sales of other products. Competition in fuel oil markets in Rumania, prior to formation of the internal sales organization, was so severe the oil could not be profitably marketed.

Prior to Steaua's withdrawal from the conservation pact, principal Rumanian producers had arrived at a plan for further curtailing that country's output of crude through a proposed agreement to stop development work. The proposed plan, which may yet be ratified if Steaua-Romana comes back into the group through a compromise arrangement for production, provided for the cessation of exploitation drilling as of November 1. All new drilling was to stop on that date and in the case of wells already drilling at that time, the agreement provided for the suspension of operations at a depth not greater than that at which the next casing was to be set. In addition, the agreement provided:

"Each well which is in course of drilling below the last shutoff above the formation to which it is intended to drill, may be carried to the bottom of that formation, the producer bringing in such well and including its production in the next potential test, to establish his quota of the maximum Rumanian production."

The agreement permitted the continuation of drilling in all wells for exploratory purposes, and the commencing of new exploratory wells, any well drilled at a distance of not less than 100 meters from the boundary of any concession belonging to any other producing company being considered an exploration well if: (a) Drilled in unproven land to any formation or (b) within proved regions to any formation below strata already known to be petroliferous.

Rationalization Program

Plans for Rumania's rationalization program were initiated by Astra-Romana and Romana-Americana, which were instrumental in stabilizing the export market for Rumanian refined products, and brought a degree of stability to the domestic market as well. Rumania's petroleum output has been growing at a rate considerably in excess of the consumptive requirements of domestic markets and export markets which can be economically served from Rumania, and leading companies operating in that country have been advocating a curtailment program for some months.

Crude petroleum output in Rumania for the first nine months of 1930 aggregated 4,320,000 tons, an increase of more than 22 per cent over the 3,532,523 tons in the first nine months of 1929. The five principal producers during the first three-quarters of the current year, in the order of their importance in contributing to the total, were as follows: Astra-Romana, Steaua-Romana, Creditul Minier, Phoenix Oil, and Romana-Americana.

ENGINEER'S AERIAL SURVEYS

The Engineer's Aerial Surveys has opened a general office at 403 Oklahoma Natural Gas Building, Tulsa. W. E. Lyons, who recently resigned as vice-president and director of the several corporations controlled by the R. F. Garland interests, is in charge of its affairs with Lieut. J. A. Reece, a former war pilot and veteran aerial photographer, handling operations. This company maintains its own laboratory, especially constructed and equipped to take care of aerial photographs, at Fifty-first Street and Sheridan Road, Tulsa, and will specalize in aerial photographs of prospective pipe lines, highways, real estate and industrial projects, aerial maps of cities and large areas of land for geological purposes.

SINCLAIR DIVIDEND

NEW YORK, Nov. 24.—Sinclair Consolidated Oil Corp. Monday declared a quarterly dividend of 25 cents on the common stock as reduced from 50 cents paid previously.

A statement issued by the board of directors said the corporation this year will do the largest volume of business in its history, but that it has been impossible to realize satisfactory profits, owing to general business conditions, oversupply and lower consumption, and low prices. The board explained that it felt it was in the best interests of the stockholders to maintain the corporation's "exceptionally strong position by a conservative course at this time."

STUDY POLYMERIZING OF LIGHT RESIDUE GASES

(Continued from Page 121)

paraffin hydrocarbons from pentane upwards, whilst the higher boiling fractions were deficient in hydrogen and correspond to the formulae C_nH_{2n-6}, C_nH_{2n-8}, C_nH_{2n-10}.

"After explaining the proceedure of the experiments in every detail the following conclusions were drawn:

"From the results of these experiments, the synthetic oils from ethylene produced in the manner described cannot be classified as equal to petroleum lubricants as regards the tendency to oxidation and as regards durability except in the one case. The former property is of great importance as already the fatty oils have become unpopular on account of their greater tendency to oxidise to gummy bodies than petroleum lubricants. In this connection, the possibility of adding inhibitors such as lead tetraethyl to lower the oxidation tendency should not be overlooked.

"Other substances are also claimed as inhibitors to lubricating oil oxidation such as: approximately 1 per cent of urea nitrobenzene, and also free sulphur, but the question as to whether these doped oils stand up better to practical conditions of use has recently been raised.

"It is considered by the authors that inhibitors are only palliatives to this problem and that further research may yield synthetic oil as valuable as petroleum fractions. Refining as it is known with petroleum distillates will be practically unnecessary with these synthetic oils and will mainly depend on the purity of the original ethylene gas. As wax is absent this refining is still further simplified. Stability, embracing both chemical reactions, oxidation, and polymerisation, is the most desirable feature in lubricating oils. Uniformity in physical properties such as maintenance of viscosity with temperature is also desirable. It will have been observed that while some of the synthetic oils had steeper temperature-viscosity curves than corresponding petroleum lubricating oils, others had curves more similar. Further research will be directed towards the production of synthetic oils of even greater stability and uniformity."

DEATH OF H. H. JACOBUS

Harry H. Jacobus of Tulsa, drilling contractor and oil producer, died in a Tulsa hospital on Wednesday, November 19, following a stroke of apoplexy. Mr. Jacobus came to Oklahoma in 1913 from Ohio. He was engaged in drilling operations in Tulsa and Muskogee Counties with headquarters in Muskogee until 1919 when he came to Tulsa to reside, thereafter broadening his drilling operations to include most of Oklahoma's oil regions. Mrs. Jacobus and three sons and three daughters survive him.

COLUMBIA GAS

Report of Columbia Gas & Electric Corp. and subsidiaries, for 12 months ended September, shows net income of $28,667,172 after depreciation, depletion, taxes, interest, preferred dividends of subsidiaries, etc., equivalent after deducting preferred dividends paid to $2.26 a share on 10,080,516 average common shares outstanding during the period and $1.95 a share on 11,684,201 no-par common shares outstanding on September 30, last. This compares with $20,870,045, or $2.97 a share on 8,476,682 common shares in 12 months ended September 30, 1929.

Net income for quarter ended September 30 last was $2,216,534 after taxes and all charges, equal after allowance for preferred dividend requirements, to 6 cents a share on 11,684,201 comman shares. This compares with $3,688,642 or 26 cents a share on 8,476,682 common shares in September quarter of 1929.

The oil and gasoline properties of Columbia system having been segregated as of January 1, 1930, the statement does not include the earnings therefrom for the periods since that date, but does include the dividends declared on preferred stocks of Columbia Oil & Gasoline Corp., owned by Columbia Gas & Electric Corp., which dividends amount to essentially all the earnings available therefor.

For nine months ended September 30, 1930, net income was $18,785,628 after taxes and all charges, equivalent after allowance for preferred dividend requirements, to $1.23 a share on 11,684,201 common shares against $22,060,085 or $2.09 a share on 8,476,682 common shares.

DISTRIBUTION PROBLEMS ARE SUBJECT OF SURVEY

"Delivering Oils and Gasoline Profitably" is a 24-page booklet prepared by the General Motors Truck Co., Pontiac, Mich., which might well be in the hands of every man engaged in the marketing branch of the petroleum industry, for it presents extremely valuable information in an attractive form. The booklet summarizes facts obtained in an impartial nationwide survey dealing with problems encountered in establishing and managing a profitable system of distributing oils and gasoline. It is devoid of advertising.

To get the facts desired trained investigators spent months in close contact with the petroleum industry. Sales problems and delivery problems were analyzed thoroughly. Investigators rode many miles on trucks, studying the equipment at work, checking its efficiency and photographing interesting variations in equipment and operation.

Subjects treated include: "Delivery and the Distributor's Profits," "More Profits from Better Truck Management," "Reducing Time Lost in the Shop," "Establishing Effective Maintenance," "Check Sheet for Maintenance Practice," "Cutting Time Losses at the Bulk Station," "Avoiding Lost Time on the Route," "Turning Time Saved into Profits," "Using Time Saved for Profitable Expansion," "Reducing Underload Deliveries," "Handling Dull Periods Economically," "Increasing Profits by Better Sales Direction," and "Building More Profitable Routes."

Copies of the booklet may be obtained from the company or from any of its agents without cost or obligation.

COLUMBIAN CARBON

Columbian Carbon Co. and subsidiaries report for quarter ended September 30, 1930, net income of $445,274 after federal taxes, depreciation, depletion and minority interests, equivalent to 89 cents a share on 498,505 shares of no-par stock. This compares with $783,175 or $1.57 a share on 498,505 shares in preceding quarter and $801,697 or $1.75 a share on 457,344 shares in third quarter of previous year.

Net income for first nine months of 1930 totaled $2,038,455 after above charges, equal to $4.09 a share on 498,505 shares, comparing with $2,887,970, or $6.31 a share, on 457,344 shares in first nine months of 1929.

LINE TO LEGRANDE POOL BEGUN

HORSE CAVE, Ky., No. 24.—The Charles C. Stoll Co., Louisville, Ky., has started the laying of a pipe line from the Legrande Pool, in Hart County, to Horse Cave, the first line not having the capacity to care for the increased production.

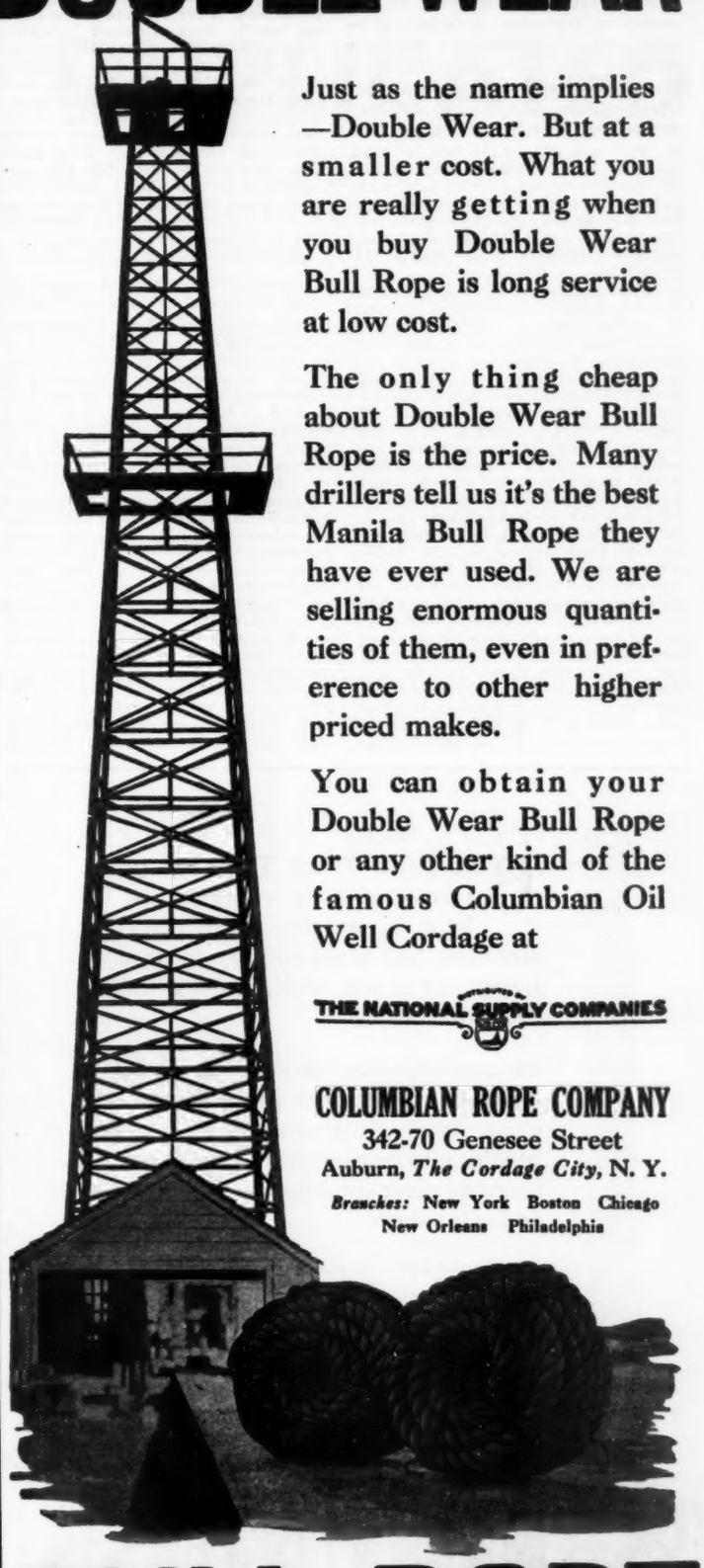
ROBERT M. GALER DEAD

Robert M. Galer of Tulsa, president of the Galer Oil Co. and for 16 years active in the oil business in Oklahoma, died Sunday, November 23, at his home. Pneumonia was given as the cause of death. The funeral and burial were conducted on Tuesday in Tulsa.

COLON PRODUCTION

Colon Oil Corp.'s subsidiary in Venezuela reports well No. T-72 brought in producing 450 bbls. per day, eleven-sixteenth-inch flow-plug, casing pressure 290 pounds, tubing pressure 150/160 pounds. Production for the week ended November 14 was 96,595 bbls.

DOUBLE WEAR



Just as the name implies —Double Wear. But at a smaller cost. What you are really getting when you buy Double Wear Bull Rope is long service at low cost.

The only thing cheap about Double Wear Bull Rope is the price. Many drillers tell us it's the best Manila Bull Rope they have ever used. We are selling enormous quantities of them, even in preference to other higher priced makes.

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BULL ROPE

SURVEY SHOWS INCREASED USE OF FUEL OIL FOR HEATING BUILDINGS

Deliveries of gas oil and fuel oil during 1929 reached a total of 408,735,493 bbls., including exports and shipments to noncontiguous territories, according to reports made by refining and marketing companies to the United States Bureau of Mines, Department of Commerce. This figure compares with deliveries of 397,660,095 bbls. in 1928; 381,662,801 bbls. in 1927; and 372,650,767 bbls. in 1926. An increase of 16,352,786 bbls., or 4.63 per cent, was reported in deliveries within the United States, while shipments to foreign countries and noncontiguous territories decreased 5,277,388 bbls., resulting in a net increase in deliveries of 11,075,398 bbls., or 2.8 per cent.

The major portion of the extension in domestic demand resulted from increases in railroad fuel oil consumption and stocks, larger deliveries of bunker oil to steamships, the greater use of oil as fuel in petroleum refining and other oil company activities and as a fuel in the generation of electric power, states E. B. Swanson, chief economist, Petroleum Economics Division, in a report just published. Although deliveries to certain classes of manufacturers were less than in 1928, the demand of the manufacturing group as a whole was larger than in the two preceding years but slightly less than the total attained in 1926. Deliveries of various grades of fuel oil for commercial and domestic heating reflected the extension in the use of oil as a fuel for the heating of buildings. Decreases were recorded in deliveries to manufactured gas plants, naval vessels and yards and in shipments to foreign countries. The decrease in exports continued to reflect the expansion of refining facilities in the Caribbean area, with resulting increased shipments of fuel oil to countries formerly supplied directly from the United States.

Railroad purchases of fuel oil were appreciably larger than in 1928, resulting equally from increased locomotive consumption of fuel oil and the additions made during the year to the quantities of fuel oil held in railroad storage facilities. The quantity of fuel oil consumed in locomotives operated on Class I railroads was 3,178,602 bbls. larger in 1929 than in the preceding year, while stocks were increased by 3,315,292 bbls., the quantity of fuel oil held by railroad companies being 19,600,822 bbls. at the end of 1929, as compared with 16,285,530 bbls. at the beginning of the year.

The total of deliveries to gas and electric power plants registered a small increase, the gain in oil consumption in the generation of electric power more than compensating for the decreased use of oil in the manufactured gas industry. The quantity of electric power generated by water power was approximately the same in 1929 as in 1928, the gain in output resulting from fuel power plants. The use of oil for the enrichment of water gas continued to decline and the consumption of fuel oil was further reduced through the extension of natural gas distribution in California, where reformed natural gas was substituted for the oil gas previously manufactured. Deliveries of bunker oil to steamships continued as the largest item of demand, the requirements of vessels engaged in foreign trade increasing by 1,039,825 bbls. and for coastwise vessels by approximately the same amount.

The consumption of oil as fuel at petroleum refineries and in other oil company operations increased from 50,044,106 bbls. in 1928 to 56,206,214 bbls. in 1929, an increase of approximately the same amount as reported for 1928 over 1927. The consumption of oil as a refinery fuel totaled 51,544,000 bbls. in 1929 as compared with 46,400,000 bbls. in 1928 and 41,462,000 bbls. in 1927, the use of oil as a fuel in field drilling operations accounting largely for the remaining balances. Increases were reported for a number of manufacturing items, with decreases recorded for logging operations, cement and lime plants, automotive establishments and the ceramic industries. The extended distribution of natural gas was responsible largely for the smaller use of oil as a fuel at cement plants and in the ceramic industries.

The use of oil as a fuel in the heating of buildings continued the increase which has been recorded annually since statistical data were available. Including all grades of light and heavy fuel oils, the 1929 consumption for the heating of buildings totaled 35,333,000 bbls. as compared with 30,699,000 bbls. in 1928, and 27,459,000 bbls. in 1927. Of the 1929 consumption the heating of commercial buildings accounted for 17,693,000 bbls. and the heating of homes of 17,640,000 bbls.

Aside from facts of interest regarding particular items of distribution or consumption, general tendencies of special interest which were brought to the attention of the Bureau of Mines included the increasing extension of natural gas distribution facilities and the substitution of heavy fuel oil or cracking-still residuum for lighter grades of fuel oil. Two manufactured gas plants in the Atlantic Coast region were successful in substituting Bunker C oil for the gas oil previously used in the enrichment of water gas; several steel mills have adopted the use of low gravity oils in open-hearth furnaces in place of the oils approximating Bunker C grade which previously were used; and it has been reported that certain railroads have conducted experiments relative to the use of low gravity cracking-still residuum as a locomotive fuel.

The Pacific Coast states continued to lead in the regional distribution of gas oil and fuel oil, followed by the South Central and Middle Atlantic states, the same order as recorded in each of the four annual surveys of fuel oil distribution. The Pacific Coast area recorded a decrease in relative distribution, while the South Central and Middle Atlantic states both recorded increases. The demand in the North Central area, consisting largely of the states bordering the Great Lakes, showed a small decrease over the preceding year, as did also the Rocky Mountain region, while the New England area showed an appreciable increase and the South Atlantic region, which recorded continuing decreases during the three earlier surveys, showed a small gain. Exports and shipments to noncontiguous territories made up 9.58 per cent of the total 1929 distribution, as compared with 11.17 per cent of the 1928 deliveries and 12.42 per cent of the 1927 total, reflecting the decreases recorded in 1928 and 1929 in the quantities of gas oil and fuel oil shipped to points outside of the United States.

The trend in regional demand as indicated for 1929, in comparison with the preceding years, was influenced to some degree by the increasing distribution of natural gas. The areas in which natural gas distribution recently has been extended, such as the Pacific Coast and Rocky Mountain regions, reported actual and proportional decreases in deliveries. The major portion of the decrease in deliveries to cement and lime plants in California resulted from the substitution of natural gas for the fuel oil which previously had been used, while deliveries to ceramic industries were reported as being affected in a similar manner. Deliveries to gas and electric power plants in California were only slightly smaller than in 1928, the decline in consumption of fuel oil in the manufacture of oil gas being compensated for by the increased demand for oil as a fuel at electric power plants. During the latter part of 1929, reformed natural gas was distributed in the San Francisco area in place of the oil gas previously manufactured.

The increase of 5,862,118 bbls. reported for the South Central states in 1929 resulted largely from the increase of 4,358,323 bbls. of fuel oil consumed by the oil industry at refineries and in the fields. A substantial increase in deliveries to railroads operating in the region was largely offset by a decline in deliveries of bunker oil to steamships. Substantial increases in deliveries were reported for the North Atlantic and New England states, while deliveries in the North Central states were approximately the same as in the preceding year.

Copies of the "National Survey of Fuel Oil Distribution, 1929" may be obtained by addressing the United States Bureau of Mines, Washington, D. C.

BECAUSE Truck Tanks, to properly serve their owners, must be light in weight, sturdy in construction, leak proof and capable of outliving the truck itself, Leader builds them that way.

Because capacities vary (300 to 2000 gallons), because trucks are different, because local situations present many problems to be overcome, Leader is prepared to meet conditions as they are,—and solve them.

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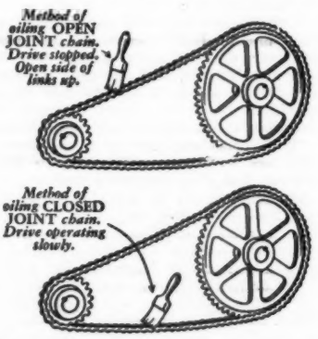
ROTARY CHAIN SHOULD BE OILED WITH CARE

By C. R. Weiss

Chief Engineer, Link-Belt Co., Indianapolis

Soon we all will be busy again, and now is the logical moment in which to figure how to make equipment last longer when again put into intensive production.



We would not consider running our automobile without oil, as we know that if we do we will have grief. Yet there are operators who run their rotary chains without lubricants, and they have grief.

A heavy, tacky oil will not flow, hence it will not penetrate to the chain joints. As the running speeds are fast, the bearing surfaces rub together rapidly, and friction results. Without lubrication galling commences, and as the metal parts wear away, the chain pitch increases to the point where the chain will not run properly on the sprockets.

For best results a good grade of lubricating oil should be used. This can be of any of the well known steam cylinder or crankcase grades. To receive full benefit from the oil, it must be applied properly to the chain. If it is poured from a can onto the back of the chain while the chain is running at high speed, little of the oil reaches the bearing surfaces of the chain joints, because the centrifugal force throws it outward.

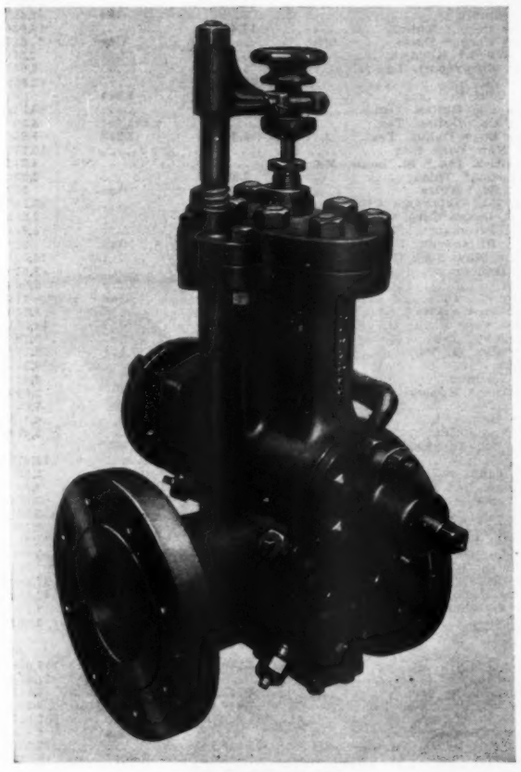
A satisfactory method is to brush the inside of the chain (that which comes next to the sprocket teeth), using a wide brush saturated with the oil. The chain can be run slowly and the brush will spread the oil on to the inside of the chain. From here the centrifugal force will throw it outward, but as its outward passage has to pass the bearing surfaces, it will naturally penetrate to these surfaces, and the necessary oil film is provided.

Because of the increasingly heavy demand on the rotary chain drive, due to increased speed and load, the necessity for proper lubrication has become more acute.

Chain manufacturers have attempted to do their part by improving the quality of their product, and several rotary chains now are made with great precision, and co-operating parts are accurately ground. The condition of the link pitch holes is closely watched, and everything possible has been done to distribute the load on the chain into proper balance.

The chain sprockets should be in alignment with each other, and the shafts parallel and level with respect to each other. The sprocket teeth should be inspected to make sure that the load is being transferred uniformly from the tooth flanks to the chain rollers.

NEITHER design nor performance CAN BE DUPLICATED



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Many field service tests have definitely proved that Plymouth Bronzo Manila Bull Ropes represent a decided advance in bull rope manufacture. In one such test, for example, three Plymouth Bronzo Manila Bull Ropes far outlasted five other ropes. That is almost two to one!

Durability and resistance to external wear are outstanding features of Plymouth Oil Well Cordage. Besides bull ropes, there are Plymouth Manila Drilling Lines, Crackers, Cat Lines and Spinning Lines—all highly recommended by drillers and contractors everywhere.

Ask for Plymouth Bronzo Manila Bull Rope at your nearest branch store of the Oil Well Supply Company. There, also, a folder on the proper method of splicing bull rope will be yours for the asking.

PLYMOUTH CORDAGE COMPANY

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OIL WELL SUPPLY CO., *Distributors*

Stores in All Oil Fields

PLYMOUTH TRADE MARK 1824

PLYMOUTH—"*the rope you can trust*"

OKLAHOMA CRUDE OIL AND GAS REPORT FOR THIRD QUARTER 1930

Gross production report for third quarter of 1930, showing all production over $5,000 and all royalty of $2,000 and upwards. Names with (*) opposite represent royalty owners, those without are producers.

A

Name and address—	Barrels	M. feet	Amount
Amerada Petroleum Corp., Tulsa	763,817.56	.....	$1,066,408.16
Amerada Petroleum Corp., Tulsa	.....	2,829,998	41,543.14
Amerada Petroleum Corp.,* Tulsa	1,542.48	.....	2,627.27
Amerada Petroleum Corp,* Tulsa	.....	1,081	71.88
Adams Royalty Co.,* Chicago, Ill.	36,291.20	.....	51,751.88
Adams Royalty Co.,* Chicago, Ill.	.....	Gas	3,926.63
Alco Royalty Corp.,* Tulsa	.....	.....	7,110.41
Acme Royalty Co.,* Ardmore	12,917.10	.....	18,124.37
Acme Royalty Co.,* Ardmore	.....	Gas	1,450.34
Accumulative Royalties Corp.,* Tulsa	11,444.64	.....	16,039.36
Accumulative Royalties Corp.,* Tulsa	.....	Gas	616.87
Allgood, Fannie, nee Wood,* Konawa	.....	.....	2,560.73
Arkansas Fuel Oil Co., Shreveport, La.	5,792.17	.....	6,052.54
Argo Oil Co., Denver, Colo.	29,066.16	.....	42,860.47
Argo Oil Co., Denver, Colo.	.....	1,094	65.64
Atlantic Oil Producing Co., Dallas, Tex.	188,052.49	.....	243,919.34
Atlantic Oil Producing Co., Dallas, Tex.	.....	292,434	8,807.76
Atlantic Oil Producing Co.,* Dallas, Tex.	6,908.20	1,858	9,556.89
Alma Royalty Corp.,* New York City	.....	.....	10,712.08
American Indian Royalties, Inc.,* St. Louis, Mo.	.....	.....	4,312.44
American Royalty Pet. Co.,* Tulsa	2,314.47	.....	3,230.11
American Royalty Pet. Co.,* Tulsa	.....	Gas	247.91
American Oil & Refg. Co., Oklahoma City	.....	.....	23,246.14
American Oil Royalties, Osage Corp.,* Tulsa	.....	.....	2,252.65
American Oil Dev. Co., Pittsburgh, Pa.	4,407.54	.....	5,491.62
American Oil Dev. Co., Pittsburgh, Pa.	.....	Gas	212.12
American-Maracaibo Co., New York City	7,858.24	.....	13,516.16
Armor Oil & Gas Co., Duncan	5,536.99	.....	8,078.36
Amster, N. L., Ardmore	5,017.62	.....	5,907.93
Amster, N. L., Ardmore	.....	Gas	444.86
Aikman, Claud E.,* Oklahoma City	.....	.....	8,130.72
Apple, S. A.,* Oklahoma City	.....	.....	14,511.19
Altom, A. A.,* Los Angeles, Calif.	.....	.....	9,194.59
Arthur Oil Co., Sistersville, W. Va.	9,184.82	17,164	12,783.63
Anthony, S. W., Mounds	.....	.....	6,327.39
Ambrister, Sallie E.,* Norman	.....	.....	2,423.51
Allgood, Fannie, nee Wood,* Konawa	.....	.....	2,560.73
Aymer, Charles, Nowata	3,963.77	.....	7,659.75
Abraham, Joe, estate,* Bristow	.....	.....	6,450.65
Anderson, A. C.,* Oklahoma City	.....	.....	3,670.94
Anderson, C. L., Nettie H., Charles, Wilmer,* Los Angeles, Calif.	15,973.14	.....	13,475.96
Altom, B. N., estate,* Tonkawa	.....	.....	3,993.12
Andrews, H. N. and Ethel B.,* Newkirk	.....	.....	4,881.30
Adamson, Peter, Jr.,* Tulsa	.....	.....	5,656.88
Anderson-Prichard Oil Co., Oklahoma City	78,402.99	.....	105,163.64
Anderson-Prichard Oil Co., Oklahoma City	.....	Gas	2,389.07
Anderson-Prichard Oil Co.,* Oklahoma City	16,656.88	.....	24,208.41
Anderson-Prichard Oil Co., Oklahoma City	23,037.51	.....	30,766.44
Anderson-Prichard Oil Co., Oklahoma City	.....	66,227	562.44
Anderson-Prichard Oil Co., Oklahoma City	27,778.01	.....	37,166.92
Atkinson, William H.,* Oklahoma City	37,400.42	.....	52,590.95
Atkinson, William H.,* Oklahoma City	.....	.....	8,525.66
Adcock, A. D.,* Okmulgee	.....	.....	3,003.21

B

Barnsdall Oil Co., Tulsa	530,249.44	.....	705,048.10
Barnsdall Oil Co., Tulsa	.....	474,911	21,274.27
Bridwell Oil Co., Wichita Falls, Tex.	4,713.17	.....	5,577.91
Bi-State Oil & Gas Co., Wichita Falls, Tex.	7,817.31	.....	7,399.87
Blackwell Oil & Gas Co., Cushing	Oil	.....	297,937.73
Blackwell Oil & Gas Co., Cushing	.....	Gas	6,150.92
Benedum-Trees Oil Co., Pittsburgh, Pa.	95,642.24	.....	127,220.63
Babcock Brothers, Denison, Tex.	8,079.05	.....	12,005.20
Barbara Oil Co., Chicago, Ill.	5,478.19	.....	6,583.49
Barbara Oil Co., Chicago, Ill.	.....	18,326	1,024.92
Belbo Oil Corp., Madill	24,694.42	.....	34,761.84
Britton-Johnson Oil Co., Tulsa	4,736.64	.....	5,781.91
British American Oil Producing Co., Tulsa	48,030.04	.....	63,172.26
Bay State Oil & Gas, Kansas City, Mo.	8,756.05	.....	12,214.54
Bay State Oil & Gas, Kansas City, Mo.	1,992.92	.....	2,687.18
Bay State Oil & Gas, Kansas City, Mo.	1,580.08	.....	2,170.73
Breene, Frank M., trust estate, Tulsa	4,939.10	.....	6,145.75
Breene, Mabel Gray, Tulsa	4,093.70	.....	5,132.46
Bart Royalty Co.,* Bartlesville	4,440.41	.....	6,106.42
Bart Royalty Co.,* Bartlesville	.....	Gas	53.69
Bell Oil & Gas Co., Tulsa	4,895.52	.....	6,729.03
Bisett-Lytle and Gray, Tulsa	7,750.36	.....	9,365.21
Bisett-Lytle and Gray, Tulsa, Account No. 2	6,121.11	.....	7,097.14
Belco Royalties, Inc.,* New York City	23,018.17	Gas	26,783.62
Black, Sivalls and Bryson, Inc., Bartlesville	.....	.....	6,074.66
Black, Sivalls and Bryson, Inc., Bartlesville	1,473.92	.....	1,959.07
Braden & Moore, Tulsa	5,020.87	.....	6,477.23
Brown-Barrett Oil Prod. Trust No. 2, Shawnee, paid by Fed. Natl. Bank, trustee	24,671.32	.....	29,495.63
Brown-Barrett Oil Prod. Trust No. 2, Shawnee, paid by Fed. Natl Bank, trustee	.....	Gas	1,026.91
Brown-Barrett Oil Prod. Trust No. 2, Shawnee, paid by Fed. Natl Bank, trustee	Oil	.....	22,508.25
Brown-Barrett Oil Prod. Trust No. 2, Shawnee, paid by Fed. Natl. Bank, trustee	.....	Gas	1,090.40
Bullock Oil Co., Oklahoma City	90,700.35	.....	141,022.23
Bullock Oil Co., Oklahoma City	.....	Gas	247.14
Buell-Herndon & Co., Inc., Tulsa	21,809.25	.....	33,567.58
Brandenburg Brothers,* Norman	.....	.....	26,039.57
Beard, J. G., and S. I. Kolb, Duncan	4,582.90	.....	6,568.91
Beard, J. G.,* Duncan	1,352.51	.....	1,765.86
Brown, W. P. and Maud E.,* Okmulgee	.....	.....	2,770.99
Brown, J. J., Jr.,* Wichita, Kans.	.....	.....	3,051.77
Born, H. A., Seminole	.....	.....	7,378.70
Barrett, Mrs. Mary F.,* Austin, Tex.	1,687.87	.....	2,160.36
Bailey, W. H.,* Ogden, Utah	2,948.39	.....	4,014.31
Baker & Strawn, Tulsa	6,937.72	21,451	8,884.47
Burns, C. D., Preston	6,213.23	.....	8,290.09
Braun, James, Bartlesville	Oil	.....	4,950.03
Braun, James, Bartlesville	.....	Gas	149.03
Bryne, John,* Tulsa	2,926.77	.....	3,960.88
Burlingame, C. E., Corp., Bartlesville	3,535.59	.....	4,984.35
Bank of America Natl Assoc., trustee, New York City	.....	.....	6,967.29
Bateman, B., et al,* Guthrie	4,812.56	.....	6,057.89
Bartlett, H. U.,* Sapulpa	.....	.....	4,203.53
Bole, George C., Tulsa	8,530.02	13,974	12,027.80
Bole, George C.,* Tulsa	1,440.08	Gas	2,424.38
Borroto, Cathrine W., New York City	.....	.....	11,788.14
Boring, O. M. and Effie,* Hobart	.....	.....	14,274.11
Berry, Thomas N. and Harriett,* Stillwater	.....	.....	8,091.22
Brady, J. G., Rock Island, Ill.	.....	.....	10,158.61
Blank, E. J.,* Cushing	.....	.....	33,139.21
Bowlegs, Lulu and Bob,* Seminole	.....	.....	3,312.65
Billington, C. B.,* Shawnee	.....	.....	13,169.35
Barney, A. E.,* Bristow	.....	.....	3,262.65
Bullock, H. E.,* Chicago, Ill.	.....	.....	20,879.69
Bullock, V. M.,* Shawnee	.....	.....	3,778.48
Bell, C. A.,* Shawnee	.....	.....	2,701.69
Braymer, A. L.,* Tulsa	1,917.58	.....	2,654.53

(Continued on Page 142)

Anchored like a stump

cannot chip or break off . . .

BLACKOR "roots" itself into the metal of your bit in a manner that prevents chipping or breaking off. It actually becomes a part of the steel, instead of merely fluxing over the surface. BLACKOR is so hard that it can only be applied with the carbon electric arc. It outwears ordinary hard-facings and inserts from 3 to 5 times.

Hard . . . like diamonds . . and bonds with the steel. Carbon electric arc applied . . . easily and quickly.

BLACKOR presents a diamond-hard surface that is solidly resistant to abrasion. There are no unprotected spots to wear away under abrasive attack. It presents a solid cutting face that can be of any desired shape or hardness. Any competent welder can easily apply BLACKOR, usually at the rate of 100 square inches per hour. One ounce will cover approximately 4 square inches...making BLACKOR the most economical to use.

Greatest economy is also assured in the method of applying BLACKOR. Electric arc welding is 10 times cheaper than acetylene welding and this saving is greatly increased in isolated fields.

Your tools will spend many additional hours down in the hole...getting results...when protected by BLACKOR. Test it out Today and note the difference!

BLACKOR COMPANY

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BLACKOR

The Super Abrasion-Resistant Facing

Of Interest to Sales Departments

GERMANY PLANS TO MIX ALCOHOL AND GASOLINE

The question of what to do with 40,000 to 50,000 tons of surplus alcohol yearly has been solved by an agreement between the German government's alcohol monopoly department and private oil companies. The private companies, in return for 51 per cent of the shares of the Reich's Motor Alcohol Monopoly Co., Ltd., agreed to absorb the alcohol surplus by mixing the product liberally with fuel gasoline.

By a decree of July 4 last companies dealing in gasoline or similar motor fuel had to purchase alcohol from the state monopoly up to 2½ per cent of the amount of gasoline they produced or imported. The price was 80 marks (about $20) per hectoliter (26.42 gallons), but the companies heretofore had the right to return unused alcohol for a refund of 15 marks (about $3.75) per hectoliter.

Under that decree many of the companies, instead of ordering alcohol just paid the government the difference between 80 and 15 marks and saved themselves shipping costs and the need of installing machinery for mixing. This increased the stock of alcohol left on the government's hands. Then there was a sharp decrease in the consumption of alcohol in beverages.

By persuading leading German oil companies to give up the privilege of returning alcohol for rebate the monopoly administration got rid of a big worry. The companies concerned are Standard Oil, Royal Dutch or their German holding companies, German Benzolverband and the Deutsche Gasolin Aktiengessellschaft.

Under the July 4 decree the companies were supposed to mix 2½ per cent of alcohol with their gasoline, as has been said, but actually the process is technically possible only if 20 to 30 per cent is used. Hence, in agreeing to mix alcohol with gasoline hereafter, the firms relieved the monopoly of much more than appeared on the surface. Experts estimate the total will be up to 50,000 tons annually.

As recompense for this agreement the government turned over to the companies involved the majority holding in the alcohol monopoly company, reserving to the Reich 49 per cent of stock and the right to appoint the president of the board of directors. The company's capitalization is 1,000,000 marks (about $250,000).

The Federation of the Automobile Industry has protested that the mixing of alcohol with gasoline will mean more expensive motor fuel.

PHILLIPS' NAME TO BE USED

CHICAGO, Nov. 22.—The Phillips Petroleum Co. will operate under its own name the businesses of the Smith Brothers Oil Co., of Kankakee and Bridley Oil Co., of Chicago Heights. The companies were bought some time ago but have continued to operate under the old firm names. The facilities of the organizations will be increased and new bulk plants added. The Phillips Petroleum Co. will build two new bulk plants, one at 124th Street and Indiana Avenue, and the other in Gary, Ind.

NORTON JOINS WHITE OAK

CHICAGO, Nov. 24.—Fred Norton, who has been in charge of the Chicago office of the Macmillan Petroleum Corp. since the offices were opened two years ago, has resigned to accept a position with the White Oak Refining Co., with headquarters in Tulsa. He will have the title of assistant manager, but it is understood that his chief duties will be the sale of the refinery products.

SHELL CHRISTMAS ROUNDUP BOOSTS SALES OF GASOLINE 318 PER CENT

There is a Santa Claus, and the Shell Oil Co. has been introducing him to more than 500,000 kiddies in the West every Christmas for the last seven years through radio and its Christmas roundups, according to E. H. Sanders, advertising manager for the company and originator of the roundup idea.

Mr. Sanders says grown-ups too catch the fever and the accompanying photograph shows some of the thousands who annually become kids again and stand before the Shell displays.

Beginning in 1923, the Shell company has annually presented some variation of the children's conception of Santa Claus

land in the wood and bright paints of "movie set" type scenery, erected near a centrally located filling station in several key cities of its western territory and has entertained young and old with a 30-day Christmas party. In the past, roundup displays have been featured in San Francisco, Oakland and Los Angeles, Calif.; Salt Lake City and Ogden, Utah; Seattle and Spokane, Wash.; Portland, Ore., and Vancouver, British Columbia.

Last year in San Francisco, that city's "finest" kept cars rolling five abreast through the filling station from which the display could be viewed.

North Pole Effects

The San Francisco set last year represented the headquarters of Santa Claus and his assistants in a mountain fastness of the North Pole. The figure of Santa Claus was centered in front of the gigantic, floodlighted representation — his huge order book on the table before him. And he talked! That was the supreme surprise for the kiddies, that their white-whiskered hero should address them. His "voice," working back of the set, spoke through a loud speaker in the mouth of the Santa Claus figure. A costumed assistant roamed through the crowd, a microphone strapped inside his coat, inquiring of wide-eyed children what they wanted from Santa. Their replies were of course audible to Santa in the control room end of the "roaming mike" and he never failed to comment to Johnnie or Jane that he thought their requests were nice and that he had no doubt he would be able to fill them.

The attraction skyrocketed gallonage of the San Francisco filling station 318.17 per cent during the 1929 display period, as compared to the average monthly sales for that year, Mr. Sanders says. Gallonage for the entire Central division, which included four displays, increased 406.05 per cent.

Balloons and Candy Distributed

"The Shell company does not premium its products, but during the Christmas roundups we distribute balloons and candy to the kiddies. These favors are not made a part of the sales at the station, many motorists simply coming in with their children without asking for service at the pumps. Last year we distributed 250,000 balloons and 14 tons of candy at the San Francisco show."

In 1929 the San Francisco display was responsible for a record day's sale of 16,400 gallons of gasoline during one 24-hour period. The average daily gallonage during November, 1928, was approximately 773 gallons, whereas the average for November, 1929, was 1,126 gallons, showing that the station retained a good portion of the new trade stimulated during the previous holiday display. The regular station crew of 6 is increased to 20 during the holiday period at the San Francisco display station.

New features are developed each year. Heretofore hydrogen has been used to inflate the balloons, but to guard against the possibility of an explosion the company has ordered 900 drums of helium gas this year from the Helium Corp. of America in Colorado. Five special railway tank car containers will be required to ship the gas.

The 1930 San Francisco display will represent Santa Claus' workshop, with all departments for the manufacture of the toys represented. Santa again will maintain a post office at which the visiting children may deposit their letters telling him what they want. These letters are answered by the Shell company with an acknowledgment saying that each order has been recorded. The Los Angeles display for 1930 will be on Wilshire Boulevard at Catalina, where motor traffic is said to be the heaviest within the city.

CASE-OIL DOCK COMPLETED

LOS ANGELES, Calif., Nov. 24.—The new case-oil dock at Wilmington in the harbor district of this city, under construction for several months, is now ready for operation. The facilities will be used by several oil companies active in the export and coastwise markets. The facilities represent an investment of approximately $350,000 by the city of Los Angeles. The transit shed is 340'x120' with storage space sufficient for 242,000 cases of gasoline and kerosene. This added to the facilities already available will give a total capacity of 327,000 cases. The wharf, now 560 feet long, is to be enlarged to 1,000 feet. The dock incorporates the latest features in design to assure fire protection with a minimum of labor in handling cased goods.

CODE COMMITTEES ADD NAMES

Three new members have been added to the New Mexico code committee and one to the Arizona code committee. New members for New Mexico are: Cecil Hoye, Sinclair Refining Co., Albuquerque, N. M.; W. O. Gatton, Magnolia Petroleum Co., Amarillo, Tex.; and A. E. Hind, Shell Oil Co., Phoenix, Ariz. The new member for Arizona is W. H. Ostott, Continental Oil Co., Phoenix. T. M. Dunn, Associated Oil Co., Sacramento, Calif., has succeeded Floyd Pratt, Associated Oil Co., Salt Lake City, Utah, on the Nevada code committee.

STANDARD TELLS ABOUT ORIGIN OF PRICE CUTS

The average citizen does not exert himself, as a rule, to know just why he is being charged less for a commodity than he was last week. Let prices rise and it is another story. Realizing this public utility and other corporations have taken their customers "behind the scenes" whenever conditions dictated a rise in prices, but it is rare to find one of them explaining a reduction.

The Standard Oil Co. (New Jersey), which recently reduced its schedule of gasoline prices to bring it in line with markets already established by competitors, makes a statement under the head of "Uneven Gasoline Prices" in which it condemns the widespread price cutting which in some sections of the country resulted last summer in gasoline being practically given away for the amount of the State tax, and it explains how such price wars are started

It appears, the statement says, that many oil refiners and brokers had been selling gasoline at a price which allowed the buyer, or middle man, a gross profit actually larger than the price the refiner himself was receiving for the product. Where the buyer had his own service stations, the wide play between what the gasoline cost him and its market selling price was so great as to invite price cutting, special favors and discounts. Where the buyer was in the wholesale business, it was an easy matter for him to sell to dealers under the advertised price of competitors.

The result was that companies which refused to make secret cuts, grant unwarranted commercial discounts or other special concessions, lost gallonage to competitors who offered these favors. Fortunately, an appeal to the fair mindedness of the public in severely affected areas had the desired result and the situation is said to be gradually righting itself.

VACUUM COMPLETES OIL DEPOT IN NEW ZEALAND

WASHINGTON, D. C., Nov. 24.—A new main bulk installation for the Vacuum Oil Co. Proprietary, Ltd., has been completed in Wellington, New Zealand. This large and expensive installation, states Trade Commissioner Julian B. Foster in a special report, is further evidence of this company's faith in the future prosperity of New Zealand where American oil leads in the quantity imported. During August the importation of gasoline and illuminating oil from the United States totaled 2,779,807 gallons valued at £100,203 and oil from the Dutch Indies totaled 2,303,095 gallons valued at £58,186.

The proportion of imported American lubricating oil was still greater, 211,707 gallons coming from the United States, 13,972 gallons from Australia, 12,952 gallons from the United Kingdom and 1,736 gallons from all other countries.

The new oil depot built by the Vacuum company covers 7½ acres with two motor spirit tanks of 750,000 gallons capacity each and a kerosene tank with a capacity of 150,000 gallons. The capacity of the pipe line between the ship and the land installation is 50,000 gallons per hour.—C. E. K.

HADLICK TO ADDRESS OIL MEN

Paul E. Hadlick, secretary, division of marketing, American Petroleum Institute, is to deliver an address before the Minneapolis division, Northwest Petroleum Association, which meets in the Radisson Hotel, Minneapolis, Minn., January 14 and 15.

SKILLED SUPERVISION

Guarantees the Quality

OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES—
GASOLINE—LUBRICATING OILS—
NAPHTHA—GAS—OILS—
WAX—PETROLEUM COKE—
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices: PITTSBURGH, PA.

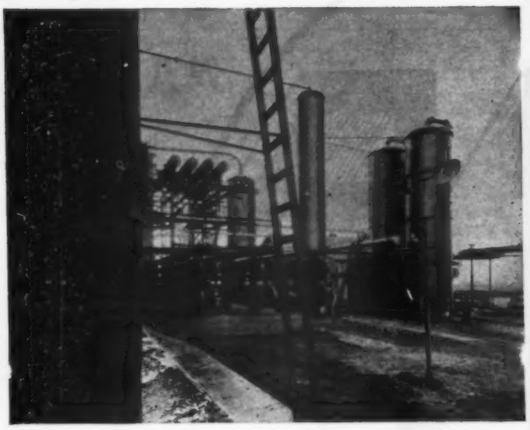
District Sales Offices

New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

—Ocean Terminals—

Boston (Beverly) Mass.
Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas.
Galveston, Texas.

Billions of Bubbles



A Non-Portable Plant That Was Transported

WHEN a 30,000-gallon gasoline plant, built to stay put, can be disassembled, moved 28 miles, re-erected, and put back in operation—all within a period of less than 30 days—it would seem that the non-portable had taken on portability.

Such was the case with the plant here pictured. Originally built in the Long Beach field, this plant was operated nine months. Then, after being shut down three months on account of a drop-off in gas, it was sold (bringing the seller a nice operating profit) and moved to its present location, where it is producing 120% of its rated capacity of finished gasoline.

The J. A. Campbell Company does not build "portable" plants; but a Campbell permanent plant can be moved when desirable, and with profit to the owner. It's all in the day's work to this group of highly trained, seasoned engineers.

Bulletin No. 7 gives much inside information about Campbell equipment and methods. Ask for it.

J. A. CAMPBELL CO.
Natural Gas Engineers
CONSULTING DESIGNING CONSTRUCTING
PHONE-41693
P.O. DRAWER 669
LONG BEACH, CAL.

STEARNS-ROGER MFG. CO., DENVER
MID-CONTINENT AGENCY

Originators of Oil-Froth Absorbers

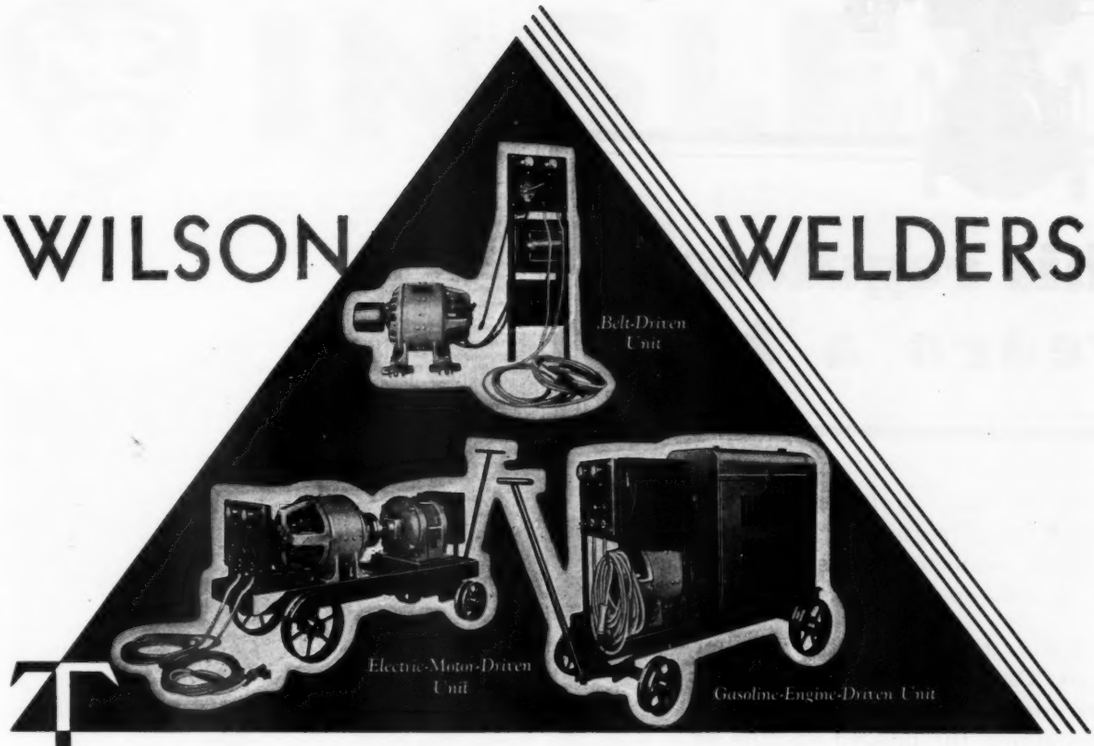
OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

(Continued from Page 138)

Name and address—	Barrels	M. feet	Amount
Bombarger, C. C.,* Paden	2,277.62	.....	3,071.07
Berry, M., estate of, H. W. McGill, admr., Ardmore	.....	.....	12,319.49
Ballard, Elizabeth, exec.,* Cushing	.....	.....	3,841.00
Bradley, Anna M., Tulsa	4,535.24	Gas	5,638.97
Brittain, W. L.,* Oklahoma City	.....	.....	2,173.28
Blue, J. O. and Ella S.,* Winfield, Kans.	4,177.43	.....	2,956.95
Beck, O. V., Nocona, Tex.	73,599.41	.....	91,573.49
Berry, G. M.,* Pawnee	.....	.....	8,405.85
Berryhill, Earle,* Sapulpa	.....	.....	2,873.72
Boring, E. M., Oklahoma City	10,430.70	2,055	13,518.14
Buttram, Frank,* Oklahoma City	.....	.....	16,553.21
Buttram, Frank, Oklahoma City	.....	.....	2,201.66
Bryan Pet. Co., Tulsa	8,778.46	.....	12,649.13
Bryan Pet. Co., Tulsa	.....	27,073	2,810.89
Baker, T. J.,* Central Natl. Bank, Okmulgee	.....	.....	3,222.62
Baker, T. J.,* Central Natl. Bank, Okmulgee	.....	.....	3,003.19
Brame, L. L.,* Los Angeles, Calif.	.....	.....	4,083.70
Bridgeford, J. R., Synd. A 51, New York City	.....	.....	4,043.12
Burns, R. H.,* care Liberty Natl Bank, Oklahoma City	35,159.93	.....	33,271.28
Berry, W. E., estate, care Stillwater Natl Bank	.....	.....	10,117.10
Berry Pet. Co., Tulsa	7,469.21	.....	9,547.34
Buttram, Frank, Oklahoma City	250.25	.....	322.83
Buttram, Frank, Oklahoma City	.....	208.784	10,439.18
Buttram, Frank, Oklahoma City	.....	147,872	7,393.62
Burke-Greis Oil Co., Tulsa	122,540.59	.....	161,029.72
Burke-Greis Oil Co., Tulsa	.....	Gas	19,639.72
Burke-Greis Oil Co., Tulsa	3,952.63	.....	5,806.39
Buckley, Emma E.,* Westwood, N. J.	.....	.....	3,033.67
Butler, Iola,* Wanette	.....	.....	5,747.23
C			
Critchlow, W. S., Ardmore	.....	.....	9,738.41
Continental Oil Co., Ponca City	555,284.38	.....	766,038.29
Continental Oil Co., Ponca City	.....	Gas	75,856.65
Champlin Refining Co., Enid	178,940.00	.....	245,228.19
Champlin Refining Co., Enid	.....	157,833	27,970.69
Central Valley Oil Co., Cleveland, Ohio	.....	.....	8,204.54
Conservation Oil Co., Tulsa	6,767.96	.....	8,573.06
Carter Oil Co., Tulsa	2,106,297.67	.....	2,716,306.27
Carter Oil Co., Tulsa	.....	Gas	161,555.66
Carter Oil Co., Tulsa (suspense)	.....	.....	41,982.66
Coline Oil Co., Oklahoma City	24,292.04	.....	19,180.28
Coline Oil Co., Oklahoma City	.....	Gas	127.35
Coline Oil Co., Oklahoma City	347,636.20	1,850,762	489,605.09
Cromwell-Franklin Oil Co., Oklahoma City	206,751.46	.....	279,082.27
Cromwell-Franklin Oil Co., Oklahoma City	.....	Gas	28,681.91
Cromwell-Franklin Oil Co., Oklahoma City	.....	Gas	5,774.85
Cal-Cul Oil Co.,* Okmulgee	.....	.....	2,660.95
Colonial Royalties Co.,* Tulsa	.....	.....	3,535.75
Cudahy Oil Co., Cleveland, Ohio	11,048.66	.....	12,509.33
Comar Oil Co., St. Louis, Mo.	478,241.18	.....	714,136.23
Comar Oil Co., St. Louis, Mo.	.....	369,922	23,762.49
Creo Oil Co., Tulsa	7,982.47	.....	9,490.66
Central Petroleum Co., Tulsa	6,039.96	.....	7,586.00
Central Commercial Oil Co.,* Tulsa	23,501.18	.....	2,689.93
Central Natl. Bank, trustee,* for T. J. Baker, Okmulgee	.....	.....	2,222.62
Central States Production Corp., Tulsa	.....	146,712	8,187.76
Cortez Oil Co.,* Tulsa	2,993.34	.....	3,993.72
Cortez Oil Co., Tulsa	.....	Gas	253.90
Cortez Oil Co., Tulsa	.....	.....	1,255.03
Consolidated Gas Utilities Co., Ponca City	.....	Gas	33,189.77
Cities Service Gas Co., Bartlesville	.....	Gas	28,631.01
Canadian Royalty Oil Co.,* St. London, Ontario	.....	.....	2,742.53
Clubb, Laura A.,* Tulsa	.....	.....	6,570.25
Cox, Edwin B. and Jake L. Hamon, Ardmore	.....	.....	11,121.26
Cox, Anna Elizabeth,* Ardmore	.....	.....	4,169.82
Clubb, I. M.,* Kaw City	4,511.48	.....	6,565.77
Comegys, W. B.,* Oklahoma City	.....	.....	4,369.63
Comegys, E. F., Sr., Oklahoma City	.....	.....	2,092.70
Cochran, A. D.,* Okmulgee	5,266.50	.....	7,686.36
Carmichael, Dorothy,* Tonkawa	.....	.....	2,208.13
Cline, W. S.,* trustee, Newkirk	.....	.....	2,196.39
Cline, W. S.,* Newkirk	.....	.....	2,905.88
Cherry, C. C.,* Maud	.....	.....	2,490.59
Collins, June H.,* Tulsa	.....	.....	3,648.12
Chesnut, O. G.,* Oklahoma City	.....	.....	4,917.12
Crenshaw, Mrs. Gordon P.,* Jonesboro, Ark.	.....	.....	2,429.68
Cornell, Herman D., trustee, Los Angeles, Calif.	3,564.36	.....	5,750.52
Cornell, Herman D.,* Los Angeles, Calif.	.....	.....	3,250.21
Commonwealth Trust Co., Okmulgee	5,065.45	.....	5,845.18
Connelly, G. W., Caney, Kans.	.....	.....	6,587.27
Crane, T. R., trustee,* Mansfield	5,796.16	.....	6,945.41
Claver, Jennie,* Galena, Ill.	.....	.....	8,315.00
Campbell, H. D., trustee,* Raymondville, Tex.	.....	.....	9,472.67
Campbell, J. D.,* Seminole	.....	.....	10,491.36
Canary, S. C., Tulsa	4,897.67	.....	7,092.23
Canary, S. C., Tulsa	.....	Gas	585.11
Cowden, R. A.,* Shawnee	.....	.....	2,647.61
Cruce, M. K.,* Oklahoma City	.....	.....	3,920.26
Cruce, M. K.,* Oklahoma City	.....	.....	13,260.93
Clark, Dillard H., Jr.,* Oklahoma City	.....	.....	2,495.55
Cook, William Jones, trustee, Muskogee	13,111.98	.....	19,440.82
Carpenter, William G.,* Lees Summit, Mo.	.....	.....	5,260.52
Crews Estate Oil & Gas Prod., Enid	6,187.64	.....	9,714.51
Crews Estate Oil & Gas Prod., Enid	.....	7,936	735.91
Clover, Jack M.,* Tulsa	1,730.28	.....	2,106.52
Clover, Goldie R.,* Tulsa	1,730.28	.....	2,106.52
Crosbie, J. E., Inc., and Robinson, Inc., Tulsa	30,110.43	.....	39,657.96
Crosbie, J. E., Inc., Tulsa	15,486.40	216,659	22,223.24
Crosbie, J. E., Inc., Tulsa	5,787.98	.....	6,265.49
D			
Darby Petroleum Corp., Tulsa	300,286.21	.....	401,182.74
Darby Lynde Co., Tulsa	59,904.07	.....	83,274.61
Darby Lynde Co., Tulsa	.....	108,548	4,043.53
Darby Petroleum Corp., Tulsa	.....	Gas	7,322.65
Darby, J. F.,* Muskogee	.....	.....	2,132.65
Doss Oil Royalty Co.,* Oklahoma City	9,694.71	.....	11,789.74
Doss Oil Royalty Co., Oklahoma City	.....	Gas	359.69
Dixie Oil Co., Inc., Tulsa	548,547.04	.....	731,179.86
Dixie Oil Co., Inc., Tulsa	.....	337,530	12,863.47
Deep Rock Oil Corp., Tulsa	226,591.96	.....	336,962.66
Deep Rock Oil Corp., Tulsa	.....	141,567	.....
Deep Rock Oil Corp., Tulsa	11,608.90	Gas	16,496.32
Deep Rock Oil Corp., Tulsa (suspense)	.....	.....	10,598.00
Delaware Consolidated Oil Co., Tulsa	44,346.38	.....	50,321.51
Devonian Oil Co., Tulsa	113,672.48	.....	161,477.97
Devonian Oil Co., Tulsa	.....	456	45.60
Duncan-Wichita Falls Pipe Line Co., Wichita Falls, Tex.	12,782.62	.....	16,909.21
Denver Prod. & Refining Co., Oklahoma City	24,942.37	.....	32,795.15
Denver Prod. & Refining Co.,* Oklahoma City	12,357.37	.....	16,692.57
Denver Prod. & Refining Co.,* Oklahoma City	.....	Gas	11.09
Delk Investment Corp.,* St. Louis, Mo.	1,973.80	.....	2,903.62
Davis, E. D., Oil Co., Oklahoma City	7,602.40	.....	7,005.93
Davis, E. D., Oil Co., Oklahoma City	.....	Gas	450.04
Davis, B. F.,* Wewoka	.....	.....	3,163.16
Dickson, J. H.,* Tulsa	3,742.37	.....	4,899.99
Dickson, J. H.,* Tulsa	.....	Gas	307.91
Dillard, Mrs. V. E.,* Ardmore	.....	.....	6,338.36

(Continued on Next Page)

WILSON WELDERS



They *increase* your *output* and *decrease* your *outlay*

IN every industry where arc-welding is used, Wilson Machines *speed up production* and *slow down expense* — because, with Wilson Machines —

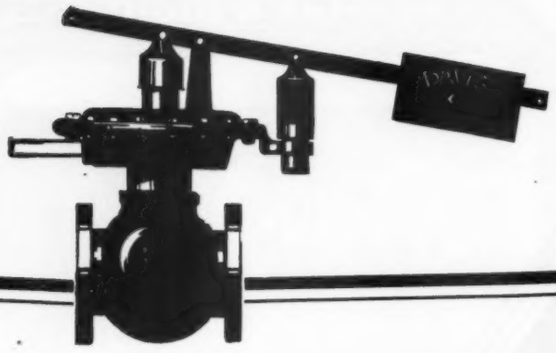
The arc is easy to strike and easy to maintain
The arc is uniform thruout the welding range
The arc is quickly adjusted from job to job
The generator is self-excited, and its commutator is always the coolest part of the machine
Only in Wilson Machines can you obtain all these features

Whether you are already using arc-welding, or are yet to profit by its advantages, you should know all about Wilson Welders. Write today for illustrated bulletins describing the complete line of Wilson Model S Machines —one-operator Type 100, Type 200, Type 300 and Type 400 ampere units; two-operator Type 400, Type 600 and Type 800 ampere units (one hour rating).

WILSON WELDER & METALS CO. INC., 18 WILSON BUILDING, NORTH BERGEN, N. J.

WILSON

WELDING MACHINES AND WELDING WIRE



This regulator wears a hat

Since oil wells rarely occur in protected spots regulating equipment must be made to work successfully in the wide open spaces.

Whatever the state of the weather, Davis Casinghead Gas Regulators give highly satisfactory service in maintaining the desired vacuum on wells, regardless of line vacuum. Practically every active natural gasoline manufacturer is using them. If you do not yet have Davis Regulators, ask the nearest user in regard to these points, in addition to protection from the elements:

—accurate, sensitive regulation
—highly dependable operation
—simplicity of operation and installation
—ease of maintenance.

We'll be glad to tell you where you can see these regulators in action. Illustrated catalog will be mailed on request.

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2543 South Washtenaw Avenue
CHICAGO, ILLINOIS

WESTCOTT & GREIS, Inc.
Sales Engineer
TULSA LOS ANGELES DALLAS

Automatic valve makers for over fifty years

DAVIS VALVE SPECIALTIES

OGJ 11-27 Gray

OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

Name and address—	Barrels	M. feet	Amount
Droppleman, John, Wewoka	.....	.....	28,481.40
Davidson, W. O.,* Ardmore	.....	.....	2,973.78
Dillon, Mrs. M. H.,* Jonesboro, Ark.	.....	.....	2,429.68
Deaner, J. J., Okmulgee	.....	.....	8,911.80
Downing, R. E., Inc., Tulsa	4,938.06	.....	6,138.50
Dilley, W. Y., trustee, Waurika	3,382.83	.....	2,885.25
Dilley, W. Y., trustee, Waurika	.....	Gas	32.13
Dixon, D. W. E.,* Oklahoma City	.....	.....	2,132.33
Dillard, I. H., exec.,* Ardmore	.....	.....	5,007.48
Doneghy, J. C.,* Tulsa	13,146.42	.....	19,268.60
Dunn, R. L.,* Oklahoma City	.....	.....	3,831.34
Dunn, Lennie,* Oklahoma City	.....	.....	2,979.93
Denney, C. C.,* Alma	2,343.75	.....	2,181.09
Douglass, H.,* Okmulgee	3,537.50	.....	4,642.77
Douglass, M. S.,* Weleetka	.....	.....	2,819.46
Dickson Oil Royalty Co.,* Tulsa	.....	.....	2,161.26
Delmar Oil Co., Bartlesville	13,407.48	.....	17,581.62
Delmar Oil Co., Bartlesville	.....	14,725	147.25
Delmar Oil Co., Bartlesville	.....	49,865	1,910.66
E			
Empire Oil & Refining Co., Bartlesville	332,892.18	.....	432,857.00
Empire Oil & Refining Co., Bartlesville	.....	Gas	20,461.00
Empire Oil & Refining Co.,* Bartlesville	18,433.62	.....	24,934.98
Empire Oil & Refining Co., Bartlesville (suspense)	.....	.....	47,197.66
Empire Oil & Refining Co., Bartlesville	.....	.....	84,217.66
Eason Oil Co., Enid	161,532.61	.....	224,902.55
Eason Oil Co., Enid	.....	184,440	7,731.33
Eason Oil Co.,* Enid	14,999.45	.....	20,679.42
Eason, T. T.,* Enid	1,593.50	.....	2,316.92
Eason, T. T.,* Enid	.....	Gas	111.16
Eason, T. T., Enid	3,299.99	.....	4,367.89
Earlsboro Production Trust No. 2, Tulsa	5,251.75	.....	7,364.52
Earlsboro Production Trust No. 1, Tulsa	16,982.34	.....	21,742.45
Eastern Royalties Corp., New York, N. Y.	.....	.....	3,872.16
Eagle-Picher Mining & Smelting Co., Henryetta	2,178.19	.....	2,872.20
Eagle-Picher Mining & Smelting Co., Henryetta	.....	84,431	4,878.11
Elm Oil Co., Tulsa	8,640.59	.....	10,707.25
Elm Oil Co., Tulsa	.....	Gas	214.56
Elm Oil Co.,* Tulsa	2,530.94	.....	3,495.99
Elm Oil Co.,* Tulsa	831.76	.....	1,010.21
Elliott and Smith, Tulsa	.....	.....	4,102.72
Elliott, W. C. and F. A., Tulsa	.....	.....	578.24
Exchange Trust Co. for others, Tulsa	.....	.....	15,530.05
Equity Royalty Corp.,* Oklahoma City	.....	.....	2,497.67
Engineers Royalties, Inc.,* New York, N. Y.	.....	.....	2,990.40
Eaves, S. A.,* Poolville	.....	.....	2,606.08
England, Alma Miller, Ponca City	.....	.....	3,587.82
Ellison, Grace B.,* Okmulgee	1,643.40	.....	2,414.74
Elliott & Vensel, Tulsa	.....	.....	6,363.18
Eacock, George J.,* Oklahoma City	.....	.....	4,918.07
Erlewine, A. J., et al, Wilson	6,286.64	.....	7,277.35
Eldin, Willard C.,* Sharum	.....	.....	2,704.25
F			
Franklin, Wirt, Ardmore	209,742.32	.....	283,152.56
Franklin, Wirt, Ardmore	.....	Gas	9,303.47
Franklin, Wirt,* Ardmore	13,590.82	.....	17,094.95
Franklin, Wirt, Ardmore	.....	Gas	112.75
Franklin, Wirt, Petroleum Corp., Ardmore	883,280.53	.....	1,131,746.29
Franklin, Wirt, Petroleum Corp., Ardmore	.....	Gas	100,748.58
Franklin, Wirt, Petroleum Corp., Ardmore (suspense)	.....	.....	5,538.83
Franklin, Wirt, Petroleum Corp.,* Ardmore	.....	.....	5,405.00
Fren Oil Co., Yale	5,327.84	.....	7,147.00
Foster Oil Co., Tulsa	5,986.95	.....	6,581.91
Finance Oil Co., Gowanda, N. Y.	10,913.08	.....	13,688.55
Foster Petroleum Co., Bartlesville	22,395.18	.....	30,183.99
Foster Petroleum Co., Bartlesville	.....	C.H.	1,162.31
Foster Petroleum Co., Bartlesville	.....	M.F.	5,367.55
Foster & Davis, Inc., Bartlesville	7,269.77	.....	9,007.08
Foster & Davis, Inc., Bartlesville	.....	Gas	59.38
Foster & Davis, Inc., Bartlesville	.....	C.H. Gas	246.28
Foster-McSwain,* Ada	.....	.....	3,340.04
Farlyn Oil Co., Houston, Tex.	5,939.79	.....	7,272.27
Franco-Canadian Royalties, Inc.,* Toronto, Ontario	.....	.....	16,983.81
Franchot, D. W., & Co., Tulsa	28,333.73	.....	36,240.32
Franchot, D. W., & Co., Tulsa	.....	Gas	3,435.29
Five State Royalty Corp., Inc.,* New York, N. Y.	.....	.....	4,204.68
Fleet,, John F.,* Ada	.....	.....	4,079.16
Fleet, D. F.,* Ada	.....	.....	16,847.83
Fleet, D. F., W. B. Osborn,* and John J. Fleet, Ada	.....	.....	15,343.84
Fleet, Alice, guardian,* Ada	.....	.....	1,793.10
Fleet, Alice,* Ada	.....	.....	1,616.25
Fleet, Jim, estate of, et al and W. B. Osborn, Ada	.....	.....	1,897.20
Fleming & Kimbell, Sherman, Tex.	5,986.56	.....	8,580.66
Flynn Oil Co.,* Oklahoma City	.....	.....	3,180.91
Flanagan, J. P.,* Tulsa	.....	.....	4,710.31
Flanagan, J. P., Tulsa	.....	.....	2,176.84
Fidelity Royalty Co.,* Oklahoma City	.....	.....	3,306.54
Fitzgerald, H. L.,* Tulsa	.....	.....	2,013.00
Frank, J. S., trustee, Oklahoma City	.....	.....	5,132.89
Frank, J. S., trustee, Oklahoma City	.....	.....	4,266.18
Frank, J. S., trustee, Oklahoma City	.....	.....	20,459.11
Finerty Investment Co., agent,* Oklahoma City	.....	.....	2,114.79
Follansbee, C. L.,* Eufaula	.....	.....	2,101.73
Fore, J. C.,* Wewoka	.....	.....	5,311.24
Folk, H. B.,* Sand Springs	1,698.58	.....	2,394.60
Frantz, Fritz,* Deer Creek	.....	.....	3,211.99
Fondren, W. W.,* Houston, Tex.	.....	.....	2,160.35
Findley, E. G.,* Cleveland	.....	.....	2,705.88
Farlwy, G. W.,* Oklahoma City	.....	.....	26,217.87
Fuzzell, Joe,* Oklahoma City	.....	.....	3,961.21
Foster-McSwain,* Ada	.....	.....	3,340.04
First National Bank, trustee, Wichita, Kans.	.....	.....	2,281.46
G			
Gypsy Oil Co., Tulsa	1,927,086.49	.....	2,614,214.00
Gypsy Oil Co., Tulsa	.....	201,527	15,052.42
Gypsy Oil Co., Tulsa	139,130.65	.....	185,233.52
Gypsy Oil Co., Tulsa	.....	Gas	119,630.00
Gypsy Oil Co.,* Tulsa	1,836.23	.....	2,302.21
Gypsy Oil Co., Tulsa (suspense)	.....	.....	87,261.00
Gypsy Oil Co., Tulsa (suspense)	.....	.....	73,522.33
Gypsy Oil Co., Tulsa (suspense)	.....	.....	2,200.00
Gypsy Oil Co., Tulsa (suspense)	.....	.....	10,805.66
Graokia Gas Co., Wichita Falls, Tex.	46,295.59	.....	53,670.73
Gled Oil Co., Tulsa	30,909.02	.....	40,905.02
Gilmer Oil Co., Ardmore	32,274.90	.....	38,560.42
Gardner Petroleum Co., Tulsa	7,022.82	.....	9,840.44
Gardner Petroleum Co., Tulsa	.....	Gas	332.86
Glidden Oil Corp., Tulsa	4,018.14	.....	5,403.28
Goddard Co., Ardmore	6,093.38	.....	7,972.60
Goddard Co.,* Ardmore	6,565.74	.....	6,184.02
Gates Oil Co., Ardmore	9,188.62	.....	10,333.27
Galt-Brown Co., Ardmore	10,041.08	.....	13,044.01
Galt-Brown Co., Ardmore	.....	Gas	8.58
Gilcrease Oil Co., Tulsa	23,087.99	.....	24,340.90
Grimes and Gillespie, Tulsa	9,813.48	.....	13,082.52
Gillespie, F. A., & Sons Co., Tulsa	16,531.96	.....	18,547.05
Guaranty Trust Co. of New York, New York, N. Y.	.....	.....	10,158.98
Guaranty Trust Co. of New York, New York, N. Y.	.....	Gas	328.73
Glass & Harmon, Nowata	9,605.65	.....	12,159.25
Glass, J. Wood,* Nowata	5,653.07	.....	6,939.12
Grisso Royalty Corp.,* Enid	.....	.....	3,258.17
Grisso Royalty Corp., Enid	.....	.....	1,091.53
Grisso, W. E.,* Seminole	..... Oil	.....	23,059.39

(Continued on Next Page)

INSLEY

Insley Speeds Up Pipe Laying

A Half-Yard Insley Shovel or Skimmer grading right-of-way in front of the trenching machine smooths the way for the trencher, gives more trench per day and therefore more pipe laid and backfilled per day.

The Half-Yard Insley is flexible—it gets over ground rapidly — gets out of tight places easily — handles a lot of dirt in a day's time — and permits the trencher to develop full speed.

Prominent pipe line contractors use Insleys with their trenching machines because they speed up pipe laying.

A Great Trench Excavating Combination:

INSLEY Half-Yard with PARSONS Ditcher

THE Parsons is outstanding in heavy duty, rugged construction, flexibility in digging speeds and adaptability to greatest variety of conditions. Ask for Parsons catalog.

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Pavers, Mixers; Power Shovels, Pull Shovels, Cranes, Draglines; Dumptors.

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Excavators; Concrete Placing Equipment, Cars, Buckets, Derricks.

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Portable Saw Rigs, Pumps, Hoists, Material Elevators.

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Mixers: Concrete, Plaster and Mortar.

HANDLING the entire N. E. C. line, we are obligated to maintain a standard of localized service consistent with the national service-standard of N. E. C.! The scope of N. E. C. lines gives you all advantages of centralized buying.

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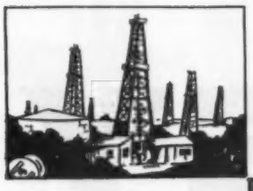

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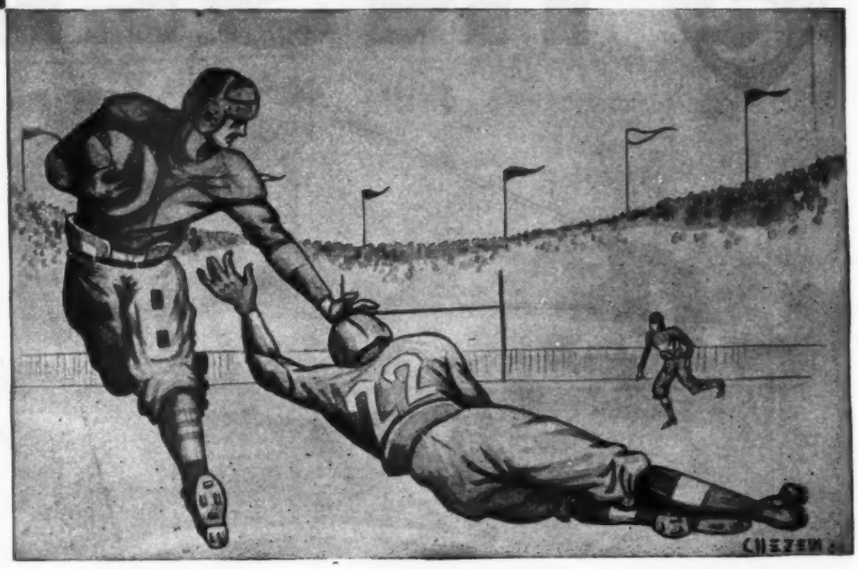
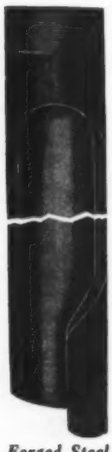


Releasing and Circulating Overshot



Forged Steel Wall Hook

Milling Shoe

The score is six to nothing in favor of the powerful, famous invaders. The hopes of the home team are pinned on "Big Boy" Brown.

Brown is injured and one knee swelling fast. He does the unexpected. He drops back and place-kicks squarely through the goal posts for three points. The home team jockeys the ball to midfield and the last down finds the ball on the invaders 43-yard line. Everyone expects "Big Boy" to punt. Instead, he drops another place-kick through the posts to tie the score.

The invaders rush in fresh men and soon push across another touchdown, kick goal and then place-kick, making the score 16 to 6.

"Big Boy" now turns loose. In spite of a game leg, he rounds the ends, shoots through the line and batters his way down the field. In nine plays he carries the ball 70 yards to score a touchdown. A few minutes later he boots a third place-kick through the posts from the 30-yard line to the count 16-all.

Both teams are tired now and neither can make gains. Brown again astonishes the crowd by booting a 48-yard kick square and true between the uprights to make the last score and the game ends 19 to 16. The home team wins purely on the grit and skill of its star player. His perfect performance has thrilled the cheering crowd and humbled the fighting machine of the invaders.

A thrill of a different kind awaits you in the perfect performance of the American Releasing and Circulating Overshot—the overshot that proves so profitable in use, because it replaces two or three ordinary fishing tools, saving time, money and effort.

AMERICAN
IRON & MACHINE WORKS CO.
OKLAHOMA CITY, U. S. A.

MANUFACTURERS OF OIL FIELD EQUIPMENT

OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

Name and address—	Barrels	M. feet	Amount
Grisso, W. E.,* Seminole	.....	Gas	364.63
Galer Oil Co.,* Tulsa	.....	.....	5,094.94
Green, J. D.,* Maud	.....	.....	3,204.48
Grieves, John B., Teriton	7,046.27	.....	9,226.97
Gant, Walter H., and Knox L. Garvin, Ardmore	11,122.30	.....	12,231.92
Gilliam, Mrs. Annie,* Jonesboro, Ark.	.....	.....	2,429.68
Garland, R. F., & Co., Tulsa	.....	.....	23,802.14
Gibson, John J., and Ernest W. McNeill,* Toronto, Canada	.....	.....	2,099.30
Giblet, Mrs. Ida,* Oklahoma City	.....	.....	4,866.18
Giblet, Clifford,* Oklahoma City	.....	.....	2,356.75
Griffin, Bub,* Konawa	.....	.....	3,255.86
Getzendaner, R. W., Waxahachie, Tex.	4,348.28	.....	5,145.64
Graham, Alice B., Okmulgee	.....	.....	6,196.82
Graham, Florence N.,* Montebello, Calif.	.....	.....	3,930.77
Graham, Florence N., Montebello, Calif.	.....	.....	4,675.47
Graham, James H., Tulsa	4,817.17	.....	6,551.35
Griffin, H. O.,* Konawa	.....	.....	4,527.43
Garner, Mabel,* Wewoka	.....	.....	2,178.20
Gilbreath, J. C.,* Shawnee	.....	.....	2,051.71
Gibson, E. S.,* San Benito, Calif.	.....	.....	9,365.99
Griffin, R. H.,* Konawa	.....	.....	4,592.63
Glenarvon Corp.,* Oklahoma City	.....	.....	2,196.40
Goudie, A. R., and Allan B. Shantz,* Kitchen, Ontario	.....	.....	7,596.64
Gentner, H. B., Tulsa	.....	.....	20,160.19
Goforth, Mary B.,* Shawnee	.....	.....	3,082.02
Goffott, W. C., trustee, Toronto, Canada	.....	.....	7,311.55
Gled Oil Co., Bartlesville (paid by Phillips Pet. Corp.)	11,307.18	.....	14,707.53
Gammon, W. H.,* Friona, Tex.	.....	.....	4,746.37
H			
Harmon & Reed, Nowata	5,829.08	.....	7,303.62
Heenan-Coe-Cook-Cunningham, Royalty owners, Oklahoma City, paid by First Natl. Bank & Trust Co.	17,059.68	.....	23,056.41
Heenan-Coe Co.,* Oklahoma City	.....	.....	9,865.75
Heenan-Coe Co., Oklahoma City	34,899.04	.....	47,105.79
Highway Oil Refining Corp., Tulsa	24,193.96	.....	32,608.55
Highway Oil Refining Corp., Tulsa	.....	73,938	1,103.86
Harland Oil Co., Walco	14,851.17	.....	16,547.06
Harland Oil Co., Walco	.....	59,494	2,573.03
Harris-Hays Co.,* Okmulgee	.....	.....	2,410.15
Harris-Hays Co., Okmulgee	6,215.43	.....	8,399.38
Harris, E. L., Tulsa	.....	.....	35,599.04
Harris, E. L., trustee,* Tulsa	.....	.....	5,722.46
Harris, Franchon H.,* Oklahoma City	.....	.....	6,278.33
Harris, V. V.,* Oklahoma City	.....	.....	13,097.94
Harris & Haun, Inc., Blackwell	.....	.....	15,083.14
Houston Oil Co. of Texas, Houston, Tex.	32,109.95	.....	43,374.81
Houston Oil Co. of Texas, Houston, Tex.	.....	25,700	1,065.14
Hayes, S. W., Oklahoma City	33,224.34	.....	45,246.13
Hayes, Mrs. Elizabeth R. Crockett, Oklahoma City	.....	.....	27,413.86
Home Stake Oil & Gas Co.,* Tulsa	.....	.....	83,418.99
Home Stake Oil & Gas Co., Tulsa	.....	.....	11,116.49
Home Stake Oil & Gas Co., Tulsa	.....	.....	810.66
Hay & McClure, Inc., Peoria, Ill.	11,165.75	.....	15,250.83
Hay & McClure, Inc., Peoria, Ill.	.....	Gas	462.40
Henderson Oil Co., Marietta, Ohio	7,406.06	.....	8,830.95
Hemlock Oil Co.,* Tulsa	4,566.34	.....	6,594.46
Harber, W. E., Seminole	.....	.....	14,757.40
Harber, W. E.,* Seminole	.....	.....	15,609.65
Harber, Claud,* Seminole	.....	.....	5,362.59
Houghton Royalties Co.,* Oklahoma City	.....	.....	27,156.36
Hall & Briscoe, Inc., Oklahoma City	67,243.44	.....	68,851.32
Home Gas Co. of Cushing, Cushing	11,197.99	84,882	22,152.56
Hall, J. A., Co., Tulsa	33,303.52	.....	47,959.13
Harmon, C. C.,* Nowata	.....	.....	2,585.66
Head, Frank M.,* Ardmore	.....	.....	3,052.39
Hawkins, Lessie,* Eufaula	.....	.....	4,192.48
Hoopes, Mary E.,* Hickman, Nebr.	.....	.....	7,163.54
Hughes, T. J., Cushing	.....	.....	5,337.26
Hudson, J. H., Ardmore	.....	.....	22,458.62
Hanson, Edwin, Duncan	.....	.....	3,846.01
Hussman Royalty Owners, paid by Slick Pipe Line Co., Duncan	.....	133,514	6,675.70
Haun, Carl B.,* Blackwell	.....	.....	3,025.65
Hall, J. E.,* Holdenville	.....	.....	12,315.32
Hales, W. T., Oklahoma City	39,678.98	.....	47,527.41
Hales, W. T., Oklahoma City	.....	37,064	1,505.09
Hales, W. T.,* Oklahoma City	2,267.36	.....	2,878.32
Hales, W. T.,* Oklahoma City	.....	3,119	114.89
Horton, E. N.,* Ardmore	.....	.....	2,264.84
Hollenbach, Anna W.,* New York, N. Y.	22,193.12	.....	33,413.03
Herndon, Mace and Dora,* Sulphur	.....	.....	3,995.30
Hernstadt, N.,* New York, N. Y.	3,535.33	.....	4,364.10
Harrell, Ward,* Oklahoma City	.....	.....	2,044.91
Hyde, C. B.,* Oklahoma City	.....	.....	5,001.94
Hyde, C. B.,* Oklahoma City	.....	.....	4,250.08
Howerton, Sarah J.,* Gentry	.....	.....	2,552.69
Hopper, P. M., Lubbock, Tex.	.....	.....	8,395.43
Hartley, J. C., agent,* Garber	.....	.....	3,417.28
Horton, A. D., agent,* Hawarden, Iowa	5,220.62	.....	5,954.79
Holmes, Jeanette Lewis,* Oklahoma City	.....	.....	11,492.72
Hudson, Hargrove,* Tulsa	.....	.....	3,641.62
Haddad, N. George,* New York, N. Y.	.....	.....	4,047.63
Hoopes, Charles M.,* Oklahoma City	.....	.....	5,846.07
Hoopes, Mary E.,* Lincoln, Nebr.	.....	.....	5,480.33
Haskell, Frank, agent, Tulsa	9,988.60	.....	12,039.95
Hefner Co.,* Oklahoma City	.....	.....	6,503.65
Harrington, W. J., Coffeyville, Kans.	4,129.67	.....	5,113.91
Harber, R. T.,* Seminole	.....	.....	1,765.68
Hardy, Grace,* Ripley	.....	.....	2,962.39
Herndon, Mace, Sulphur	.....	.....	12,198.66
I			
Indian Territory Illuminating Co., Bartlesville	3,388,611.47	.....	4,630,546.34
Indian Territory Illuminating Co., Bartlesville	.....	4,076,846	293,878.40
Indian Territory Illuminating Co., Bartlesville	.....	9,286,009	67,888.76
Indian Territory Illuminating Co.,* Bartlesville	64,351.69	.....	87,519.31
Indian Territory Illuminating Co.,* Bartlesville	.....	Gas	5,111.60
Independent Oil & Gas Co.,* Tulsa	.....	Gas	198.30
Indian Terr. Ill. Co., Bartlesville (suspense)	.....	.....	35,422.54
Independent Oil & Gas Co., Tulsa	461,276.16	.....	621,161.57
Independent Oil & Gas Co., Tulsa	.....	Gas	33,041.46
Independent Oil & Gas Co.,* Tulsa	5,553.15	.....	7,928.52
Independent Oil & Gas Co., Tulsa (suspense)	.....	.....	3,367.28
Iron Mountain Oil Co., Tulsa	9,724.96	.....	13,352.91
Iron Mountain Oil Co.,* Tulsa	3,291.43	.....	4,376.14
Indian Royalty Co., Oklahoma City	15,356.91	.....	20,697.20
Indian Royalty Co.,* Oklahoma City	.....	.....	11.09
Indiana Oil & Gas Co., Tulsa	23,657.25	.....	30,067.82
Indiana Oil & Gas Co., Tulsa	.....	18,761	3,141.37
Investors Royalty Co., Inc.,* Tulsa	42,445.42	.....	57,473.88
Imo Oil & Gas Co., Covington	.....	.....	8,677.19
Ingram, J. A.,* Shawnee	.....	.....	5,530.51
Ingram Royalty Co.,* Shawnee	.....	.....	5,826.00
Ingram, H. L.,* Shawnee	.....	.....	3,456.99
Imperial Royalties Co.,* Kansas City, Mo.	.....	.....	88,684.31
Imperial Royalties Co.,* Kansas City, Mo.	.....	.....	2,769.15
Illinois Refining Co., Tulsa	.....	.....	4,864.27
J			
Julian, C. C., Oil & Refining Co., Oklahoma City	20,976.97	.....	21,340.73
Jennings, R. G., Pittsburgh, Pa.	4,064.45	.....	5,815.89
Jennings, R. G., Pittsburgh, Pa.	.....	8,441	544.90
Jennings, Helen S.,* Oklahoma City	.....	.....	2,727.66

(Continued on Next Page)

Why You Should Install the "GREATER PRODUCTION" *Layne Milled Groove Screen:*

Since ten to twelve wraps of wire pass over each *groove*, excessive production over the drilled holes is avoided as a uniform feed of the fluid through the outer openings of the screen is continually fed through the drilled holes from the entire surface of the screen. This avoids the possibility of "sand cutting," which is occasioned by excessive velocity of fluid entering at any one point.

Grooves are so spaced that the drainage distance between the Keystone Wires is very short, eliminating the possibility of openings becoming clogged with mud or sand.

The *Layne Milled Groove Screen* is oil industry's latest, greatest and most important invention and is the result of more than a quarter century's experience.

Write, wire or phone for quick service, catalogue, or further information.

The Layne & Bowler Co.

Houston LAYNE Texas

Install Milled Groove Instead of Wishing You Had

The Layne New York Co. 30 Church St., New York

The Layne & Bowler Corp. Los Angeles, Calif.

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Tubing Leaks Found in Hours Instead of Days!

This immense saving in time and money has been proved in the field time after time. Whether it be a pressure split or a leaky collar it can be exactly located. It pays for itself on a single job.

Quick Facts About GRANGER Tubing Leak Indicator

1 Works By Itself

2 Stops Exactly At Leak

3 Eliminates Guess Work

4 No Chopped Rope Nor Color Methods

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R. L. Melton, Mgr.

Mid-Continent Distributor

Pelican Well Tool and Supply Co.

With Stores at—

El Dorado, Arkansas
Shreveport, Louisiana
Monroe, Louisiana
Lake Charles, Louisiana
Zwolle, Louisiana

OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

Name and address—	Barrels	M. feet	Amount
Jarvis-Zollinger & Andrews,* Shawnee	.....	.....	7,025.81
Johnson Oil Refining Co., Chicago, Ill.	31,220.37	.....	41,564.16
Johnson Oil Refining Co., Chicago, Ill.	.....	8,354	652.06
Johnson, C. O., and George C. Pendleton, receivers, Durant	.....	.....	3,623.81
Jennings, Randolph P.,* Beverly Hills, Calif.	.....	.....	4,574.58
Jackson, L. B.,* Sapulpa	.....	.....	2,491.26
Jackson & Wise, Sapulpa	5,450.41	.....	7,782.76
Jackson & Wise, Sapulpa	1,804.80	.....	2,066.33
Jackson, Wise & Bovaird, Sapulpa	2,696.71	.....	2,741.75
Jackson, L. B., Sapulpa	.....	.....	3,079.81
Jackson, Wise and Markham, Sapulpa	.....	.....	1,975.62
Jackson, Wise and Snedden, Sapulpa	.....	.....	931.56
Jackson, L. B., Sapulpa	4,891.14	.....	5,871.45
Jackson, L. B., Sapulpa	.....	.....	6,617.58
Johnston, Beth L.,* Wichita, Kans.	.....	.....	4,925.85
Jacobs, Leo, St. Louis, Mo.	6,720.94	.....	7,924.79
Jordon, P. E. V.,* Maud	.....	.....	6,282.16
Jones, E. G.,* Oklahoma City	.....	.....	2,423.00
Jones, Calvin,* Oklahoma City	.....	.....	3,280.56
Jones, W. H.,* Oklahoma City	.....	.....	12,649.97
Jones, W. M.,* Oklahoma City	.....	.....	13,539.38
Jones, Robert L., Bristow	5,689.32	.....	8,092.90
Jones, Robert L.,* Bristow	.....	Gas	541.12
Jones, R. C., & Co., Inc., Cushing	.....	.....	11,457.84
K			
Kay County Gas Co., Ponca City	.....	642,702	63,792.52
Kay & Kiowa Oil Co., Tulsa	4,520.59	.....	6,014.97
Kay & Kiowa Oil Co., Tulsa	.....	Gas	602.20
Kay Oil Co., Blackwell	12,635.48	.....	18,490.02
Kistler, W. L., Inc.,* Tulsa	.....	.....	3,766.81
Kewanee Oil & Gas Co., Titusville, Pa.	171,506.98	.....	261,002.26
Kewanee Oil & Gas Co., Titusville, Pa.	.....	175,895	.....
Keener Oil & Gas Co., Tulsa	36,880.19	.....	43,901.01
Knappenberger, Frank, Phoenix, Ariz.	.....	.....	3,012.71
Kreola Oil Co., Ardmore	9,019.21	.....	5,973.41
Keystone Production Co., Fort Worth, Tex.	3,954.24	.....	6,003.80
Kanawha Oil Co., Ardmore	4,008.47	.....	4,983.02
Kingwood Oil Co., Okmulgee	27,147.68	.....	37,832.78
Kingwood Oil Co., Okmulgee	.....	20,500	1,337.06
Keck, Itella and L.,* Nocona, Tex.	.....	.....	2,565.56
Knox, Charles E., Enid	15,787.55	1,758	21,595.36
Knox, R. B.,* Oklahoma City	.....	.....	7,439.90
Knickerbocker Royalty Corp.,* New York, N. Y.	.....	.....	2,158.36
Knotts, Sarah J.,* Stillwater	3,272.78	.....	5,172.38
Kanner, Mack,* New York, N. Y.	.....	.....	3,668.04
Klein, Nettie,* New York, N. Y.	.....	.....	5,352.41
Kimble, C. C., and Sallie H. Kimble,* Beggs	.....	.....	3,889.69
Kennedy, Emma B., and trustee, Okemah	.....	.....	3,266.19
Kershaw, L. R.,* Muskogee	1,137.88	.....	3,991.81
K. D. & H. Oil Co., Ada	2,354.99	.....	2,472.72
King, Helen Walker,* Orange, Calif.	.....	.....	10,525.25
King, Helen Walker,* guardian, Orange, Calif.	.....	.....	2,439.03
L			
Laurel Oil & Gas Co., Philadelphia, Pa.	31,010.87	.....	39,987.66
Laurel Oil & Gas Co., Philadelphia, Pa.	.....	207,157	3,748.83
Laselle, B. A., and T. E., Ada	.....	.....	48,198.27
Laselle, B. A., and T. E.,* Ada	.....	.....	2,912.94
Liberty National Bank, for Wirt Franklin	3,536.14	.....	4,236.82
Liberty National Bank for Wirt Franklin and Mary Cates	1,727.25	.....	2,089.18
Little Nick Oil Co., Chickasha	.....	Gas	8,847.47
Link Oil Co., Tulsa	17,963.86	.....	23,283.61
Link Oil Co., Tulsa	.....	Gas	257.74
Lima Oil & Gas Co., Bartlesville	2,051.20	.....	2,350.18
Lima Oil & Gas Co., Bartlesville	.....	83,684	6,786.32
Landowners Royalty Co.,* Wewoka	.....	.....	3,105.58
Lasoya Oil Co., Altoona, Pa.	4,319.19	.....	5,330.17
Lippa Co., The, Tulsa	13,592.72	.....	7,019.40
Lone Star Gas Co., Dallas, Tex.	.....	.....	4,810.90
LeFlore County Gas & Electric Co., Poteau	.....	Gas	6,082.33
Lehman, Phillip Van Meter,* Wichita, Kans.	.....	.....	4,907.59
Lamb, Homer T.,* Tulsa	.....	.....	28,015.56
Laughlin, W. T., and Lylus A.,* Oklahoma City	.....	.....	3,017.57
Lawson Petroleum Co.,* Tulsa	.....	.....	5,794.24
Lack, Matyse B.,* Oklahoma City	.....	.....	4,018.62
Lack, D. B.,* Oklahoma City	.....	.....	2,607.00
Lack, D. B.,* Oklahoma City	.....	.....	5,510.36
Love, Maud,* Cushing	.....	.....	2,945.70
Lesh & McCall et al, Nocona, Tex.	7,871.24	.....	6,297.35
Lowry, Lucinda H.,* Los Angeles, Calif.	16,769.76	.....	22,582.45
Lehman, Phillip Van Meter,* Wichita, Kans.	....	.....	4,907.59
Landon, A. M., Independence, Kans.	5,253.67	.....	7,433.74
Leopold, Alfred F.,* Chicago, Ill.	.....	.....	2,392.62
Lloyd, J. F.,* Ada	.....	.....	2,135.21
Lillard, Mrs. J. C.,* Wewoka	.....	.....	2,518.75
Lewis, A. W.,* Harlan, Iowa	2,239.85	.....	3,387.80
L. T. C. Oil & Gas Royalty Trust estate,* Oklahoma City	.....	.....	3,000.49
Lohman, John,* Morton, Tex.	.....	.....	2,102.07
Little, O. D.,* Rockfort, Tex.	.....	.....	2,134.26
Little, Olive A.,* Goodwell	.....	.....	2,177.17
LaForce & Ferguson,* Cimon, Colo.	.....	.....	6,743.00
Ludey, Patty Spence, Marietta, Ohio	3,496.65	.....	4,295.17
Lindley, Mary P.,* Sapulpa	3,229.97	.....	2,583.82
Liberty Royalties Corp.,* Tulsa	.....	.....	14,470.83
Louisiana Oil & Refining Corp., Shreveport, La.	60,004.34	.....	64,857.38
Louisiana Oil & Refining Corp., Shreveport, La.	.....	52,515	1,092.83
Mc			
McGraw Oil Co., Tulsa	16,058.12	15,184	20,434.22
McMahan, C. L., Inc., and C. L. McMahan, Tulsa	53,021.70	.....	70,677.82
McMahan, C. L., Inc., and C. L. McMahan, Tulsa	.....	Gas	741.72
McMahan, C. L., Inc., and C. L. McMahan, Tulsa	6,596.20	.....	9,312.53
McMan Oil & Gas Co., Tulsa	79,614.35	.....	107,481.92
McMan Oil & Gas Co., Tulsa	.....	Gas	4,952.64
McSwan-Foster,* Ada	.....	.....	3,340.04
McKee, S. H.,* Tonkawa	.....	.....	7,629.67
McQueen, I. R., Oklahoma City	5,628.19	.....	7,911.70
McGee, R. L.,* Tuttle	.....	.....	5,399.37
McCartney, E. M.,* Alma	.....	.....	4,091.54
McBride, W. C., Inc.,* St. Louis, Mo.	26,954.68	.....	37,167.45
McBride, W. C., Inc.,* St. Louis, Mo.	.....	Gas	48.44
McCroskey, Edgar L.,* Asher	.....	.....	6,096.33
McCroskey, Carrie F.,* Asher	.....	.....	6,096.31
McKay, Edward and Florence,* Haskell	.....	.....	3,849.63
McRoberts Royalty Co.,* Tulsa	.....	.....	2,021.00
M			
Magnolia Petroleum Co., Dallas, Tex.	2,634,156.21	.....	3,259,285.74
Magnolia Petroleum Co., Dallas, Tex., paid for others	41,297.59	.....	59,634.62
Magnolia Petroleum Co., Dallas, Tex.	.....	Gas	143,158.16
Magnolia Petroleum Co.,* Dallas, Tex.	24,752.37	.....	34,706.98
Magnolia Petroleum Co.,* Dallas, Tex.	.....	Gas	2,216.00
Magnolia Petroleum Co., Dallas, Tex. (suspense)	.....	.....	19,813.20
Magnolia Petroleum Co., Dallas, Tex. (suspense)	.....	.....	8,719.00
Magnolia Petroleum Co., Dallas, Tex., for others (suspense)	.....	.....	4,788.00
Mid-Continent Petroleum Corp., Tulsa	1,599,992.45	.....	2,128,996.61
Mid-Continent Petroleum Corp., Tulsa	.....	Gas	63,272.75
Mulberry Oil Co., Cushing	.....	.....	173,585.36
Midland Royalty Corp.,* New York, N. Y.	.....	.....	76,811.66
Monarch Royalty Co.,* Tulsa (second quarter)	.....	.....	31,866.00
Maud Oil & Gas Co., Oklahoma City	5,596.94	.....	7,846.37

(Continued on Next Page)

OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

Name and address—	Barrels	M. feet	Amount
Mammonth Royalty Corp.,* Oklahoma City	2,451.49	.....	3,634.22
Meridian Gas Co., Dallas, Tex.	.....	63,664	5,093.12
Marileen Oil & Gas Co., Blackwell	5,248.73	.....	7,508.86
Marileen Oil & Gas Co., Blackwell	.....	Gas	87.87
Malernee Oil Co., Oklahoma City	5,372.58	.....	7,310.10
Minnehoma Oil & Gas Co., Tulsa	104,493.84	.....	142,977.75
Minnehoma Oil & Gas Co., Tulsa	.....	476,392	11,736.54
Markham, J. H., Jr., Tulsa	17,206.95	.....	22,422.49
Margay Oil Corp., Tulsa	48,354.41	.....	64,454.19
Margay Oil Corp., Tulsa	.....	Gas	186.80
Mullendore Trust Co., Cleveland	.....	.....	4,666.99
Mullendore Trust Co., Cleveland	.....	.....	27,391.99
Mullendore Trust Co., Cleveland	.....	.....	701.93
Mudge Oil Co., Pittsburgh, Pa.	19,288.80	.....	14,645.56
Meadors, Frank, Jr.,* Wetumka	2,679.41	.....	3,664.56
Murphy Oil Co. of Pennsylvania, Philadelphia, Pa.	7,666.27	.....	8,628.03
Meyer, Annie,* Sapulpa	.....	.....	2,436.06
Myers, Alice Clark,* Santa Fe, N. Mex.	.....	.....	2,495.56
Myers, M. T.,* Oklahoma City	.....	.....	5,003.45
Mayes, E. L.,* Tulsa	.....	.....	12,517.28
Moore, Clint, estate, Tulsa	11,550.11	.....	15,627.35
Magruder, G. W., and Myrtle,* Sapulpa	.....	.....	3,097.55
Mathis, M. P.,* Shawnee	.....	.....	6,662.85
Montgomery, Junia E.,* Lincoln, Neb.	.....	.....	5,845.66
Milner, Jonas B.,* Allen	.....	.....	3,424.41
Mainard, M. F., Jr.,* Wewoka	.....	.....	2,684.86
Manahan Drilling Co.,* Tulsa	.....	.....	2,665.57
Martin, John W., and Estelle,* Duncan	.....	.....	2,652.94
Minor, Laveda,* Amarillo, Tex.	.....	.....	3,161.99
Million and Thomas,* McAlester	.....	.....	4,134.55
Mullellem, Sophia S.,* Muskogee	3,011.03	.....	4,643.39
Moore, J. Read,* Wewoka	.....	.....	5,063.58
Madden & Madden, Lexington, Ky.	7,157.23	.....	9,605.08
Misener, F. D., Tulsa	6,574.05	.....	7,520.70
Mason, D. B., Tulsa	11,365.08	.....	13,692.83
Mason, W. G., Chelsea	2,491.68	.....	3,449.67
Mayhue, George M.,* Ada	.....	.....	2,884.75
Melton, Alice, administratrix,* Duncan	.....	.....	2,981.27
Merrick, Ward S., Ardmore	.....	.....	7,721.11
Merrick, W. P., Inc., Ardmore	.....	.....	56,988.70
Midco Oil Corp., Tulsa	18,053.16	.....	24,420.74
Mid-Kansas Oil & Gas Co., Findlay, Ohio	398,975.19	.....	522,460.30
Mid-Kansas Oil & Gas Co., Findlay, Ohio	.....	Gas	15,513.14
Major Oil Co.,* Okmulgee	.....	.....	3,013.92
Morgan, Dudley D., Tulsa	.....	.....	5,425.20
N			
Natural Gas Producers, Tulsa	.....	73,286	6 805.43
New York Pet. Royalty Corp.,* New York City	1,690.60	.....	2,399.75
Norwood Oil Co., Tulsa	6,949.10	.....	8,312.34
Nowata Oil & Ref. Co., Tulsa	.....	.....	6,048.20
Noble, Margaret Vivian,* Ardmore	.....	.....	9,851.50
Noble-Olson Drilling Co., Tulsa	23,816.13	.....	26,565.75
Noble, Hattie E.,* Ardmore	2,574.00	.....	3,063.60
Noble, Eva E,* Ardmore	3,131.99	.....	4,087.54
National Union Oil & Gas Co., Blackwell	4,635.48	.....	6,861.29
National Oil & Dev. Co., Tulsa	8,613.34	.....	10,091.95
National Ref. Co., Cleveland, Ohio	6,772.38	16,274	23,268.22
Newman, W. C., Corp., Okmulgee	.....	Gas	12,295.67
Number One Oil Co., Tulsa	4,733.00	.....	6,496.76
Norvell, A. S.,* Wewoka	.....	.....	2 578.95
Nott, Francis O.,* Oklahoma City	.....	.....	2,057.90
Nadel, L., Tulsa	.....	.....	5,594.57
Nichols, G. A.,* Oklahoma City	.....	.....	4,719.85
Norris, W. C., Tulsa	Oil	.....	8,976.35
Neal, Justina,* Maysville	.....	.....	3,354.55
Nester Oil Co.,* Alex	.....	.....	2,709.88
Neustadt, Walter, Ardmore	.....	.....	5,446.46
North, R. B.,* Blackwell	.....	.....	2,507.71
Norton, D. J.,* Chandler	.....	.....	13,546.03
"Nitchey" lease paid by Supt. of Five Civilized Tribes	.....	.....	4,104.05
Nelson, C. M.,* Oklahoma City	.....	.....	2,063.47
O			
Osage Gas Producing Co., Independence, Kans.	.....	.....	7,279.52
Olean Pet. Co., Bristow	6,991.53	.....	12,154.28
Ohio-Osage Oil Co., Tulsa	3,894.65	.....	5,682.35
Ona Oil Co., Blackwell	.....	.....	22,613.54
Oil Prod. Royalties, Inc.,* Elizabeth, N. J.	.....	.....	4,052.67
Okla. Public Service Corp., Cedar Rapids, Iowa	5,754.12	.....	6,933.28
Okla Public Service Corp., Cedar Rapids, Iowa	.....	Gas	5,524.69
Okla. Natural Gas Corp., Tulsa	.....	401,783	14,110.21
Okla. Natural Gas Corp., Tulsa (suspense)	.....	.....	9,569.65
Oklahoma Co., Tulsa	65,612.56	.....	90,600.60
Oklahoma Co., Tulsa	.....	Gas	3,596.48
O'Rourke Oil Co., Bristow	.....	.....	6,182.69
Oil Well Supply Co.,* Pittsburgh, Pa.	.....	.....	3,098.41
Osborn, W. B.,* Ada	.....	.....	5,847.83
Oliphant, A. G., Tulsa	7,140.14	.....	6,245.20
Owen, L. G.,* Tulsa	.....	.....	2,462.60
Owens, O. O., Tulsa	8,851.04	.....	12,310.66
Owens, O. O., Tulsa	.....	Gas	171.14
Owens, O. O.,* Tulsa	1,855.95	.....	2,559.45
Orwig, S. S.,* Wewoka	.....	.....	7,676.98
O'Dell, Ollie B., Richmond, Calif.	.....	.....	4,054.89
Olds, Helen B., Russell B., Horace B., Charles City, Iowa	.....	.....	16,269.15
Operators Royalty & Producing Co.,* Tulsa	.....	.....	3,034.34
Ohio Fuel Oil Co.,* Columbus, Ohio	18,325.50	.....	24,410.55
Ohio Fuel Oil Co.,* Columbus, Ohio	.....	Gas	846.76
O'Dell, George,* Shawnee	.....	.....	2,041.30
P			
Patterson, J. A.,* Wewoka	.....	.....	2,720.90
Pace, George L., Wichita Falls, Tex.	70,038.04	.....	76,160.55
Pace, George L.,* Wichita Falls, Tex.	3,565.72	.....	3,938.16
Pyramid Oil Co., Winchester, Ky.	.....	.....	6,039.53
Prairie Oil & Gas Co., Independence, Kans.	2,569,573.34	.....	3,514,131.14
Prairie Oil & Gas Co., Independence, Kans.	.....	416,353	22,553.88
Prairie Oil & Gas Co., Independence, Kans.	.....	C.H.3,575,751	173,646.84
Prairie Oil & Gas Co., trustee, Independence, Kans.	2,743.43	.....	3,348.26
Petroleum, The, Co., Tulsa	4,757.27	.....	6,045.86
Petroleum, The, Co., Tulsa	.....	Gas	293.07
Petroleum, The, Co., and M. H. Mosier, Tulsa	11,050.99	.....	14,082.74
Petroleum, The, Co., and M. H. Mosier, Tulsa	.....	12,265	632.77
Pet. Royalty Co.,* Tulsa	.....	.....	116,105.66
Petroleum Royalty Corp., Tulsa	13,039.23	.....	17,240.05
Petroleum Royalty Corp., Tulsa	.....	Gas	644.78
Petroleum Rights Corp.,* New York City	.....	.....	8,502.56
Producers & Ref. Corp., Independence, Kans.	187,451.39	.....	198,790.21
Producers & Ref. Corp., Independence, Kans.	.....	Gas	23,581.28
Producers Oil Co., Tulsa	34,152.43	.....	46,927.19
Producers Royalty Corp.,* Tulsa	.....	.....	20,301.47
Pure Oil Co., Chicago, Ill.	.....	(gasoline)197,590	18,923.82
Pure Oil Co., Chicago, Ill.	.....	834,067	41,208.63
Pure Oil Co., Chicago, Ill.	904,615.72	.....	1,212,117.25
Pine, W. B., Okmulgee	.....	39.987	2,479.98
Pine, W. B., Okmulgee	.....	2.559	191.88
Pine, W. B., Okmulgee	.....	31.728	683.91
Pine, W. B., Okmulgee	16,048.01	.....	20,715.19
Pine, W. B., Okmulgee	62,655.27	.....	79,332.71
Pine, W. B., Okmulgee	4,814.01	.....	6,415.49
Pine, W. B., Okmulgee	730.13	.....	915.14
Pine, W. B., Okmulgee	620.17	.....	843.27

(Continued on Next Page)

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Gas and water tight, non-sparking, foot-operated. The OCECO uses no liquid seals or gaskets—contains nothing to get out of order.

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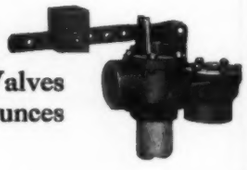

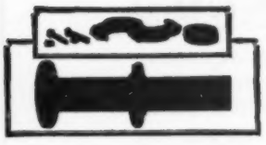

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Swing Joints
Steel Tank Nozzles
Tank Cleaners
Tank Gauges
Oceco Fire Extinguishers
Automatic Tar Plugs
Etc.

THE OIL CONSERVATION ENGINEERING COMPANY

877 Addison Road Cleveland, Ohio

OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

Name and address—	Barrels	M. feet	Amount
Pine, W. B., Okmulgee	64,005.57	.....	81,091.12
Pine, W. B., and Phillips Pet., Okmulgee	1,196.70	.....	1,690.22
Pioneer Pet. Co., Okmulgee	9,562.27	.....	11,274.73
Pioneer Pet. Co., Okmulgee	.....	2,389	167.27
Peerless Oil & Gas,* Indiana, Pa.	4,891.05	.....	6,824.96
Peerless Oil & Gas, Indiana, Pa.	.....	Gas	161.62
Paragon Oil Co., Tulsa	4,624.43	.....	5,795.62
Paragon Oil Co., Tulsa	.....	3,206	818.70
Phoenix Oil Co., Pittsburgh, Pa.	.....	.....	19,905.70
Pandem Oil Corp., Wichita Falls	3,972.91	.....	5,808.82
Phillips and J. B. Milam, Tulsa	27,703.70	.....	34,053.81
Phillips and J. B. Milam, Tulsa	14,988.24	.....	19,711.49
Phillips, N. J.,* Seminole	.....	.....	2,061.61
Phillips Pet. Co., Bartlesville	490,331.93	.....	646,500.49
Phillips Pet. Co., Bartlesville	.....	Gas	57,134.33
Phillips Pet. Co. for Gled Oil Co., Bartlesville	11,307.18	.....	14,707.59
Phillips Pet. Co. for others	.....	.....	21,032.54
Phillips, Waite,* Tulsa	1,310.48	.....	1,928.93
Phillips Hilton, Inc., Shawnee	.....	.....	9,744.09
Phillips, Hilton A., Shawnee	.....	.....	30,144.55
Phillips, Hilton A., et al, Shawnee	.....	.....	36,966.32
Plains Pet. Co., Inc., Tulsa	6,333.98	.....	8,234.05
Plains Pet. Co., Inc., Tulsa	.....	5,939	558.38
Pawhuska Oil & Gas Co., Bartlesville	.....	18,513	8,499.66
Paraffine Oil Co., Houston, Tex.	6,921.39	.....	8,051.32
Pouder Pomeroy Co., Tulsa	19,999.35	.....	31,778.04
Perkins and Cullum, Wichita Falls, Tex.	12,813.60	.....	14,564.35
Perkins and Cullum,* Wichita Falls, Tex.	3,456.60	.....	3,695.91
Penn-Ohio Gas Co., Pittsburgh, Pa.	.....	Gas	13,752.09
Papoose Oil Co., Tulsa	69,064.11	.....	96,530.06
Panther Oil & Gas, Oklahoma City	7,055.52	.....	9,623.41
Plymouth Pet. Co. et al, Tulsa	7,790.84	.....	9,787.50
Plymouth Pet. Co. et al, Tulsa	.....	Gas	137.69
Provident Royalties Corp,* Tulsa	6,091.88	.....	8,790.60
Pierce, R. H., & Co., Inc.*, Tulsa	.....	.....	2,279.04
Price, N. J. and Alpha,* Okemah	.....	.....	4,059.14
Palmer, S. T.,* Okemah	.....	.....	4,169.69
Probst, George C.,* Tulsa	.....	.....	3,496.81
Perry, C. J. and Stella,* Shawnee	.....	.....	2,674.10
Panna, E. N.,* Shawnee	.....	.....	2,551.96
Potts, Mable Dale and J. R.,* Yale	.....	.....	4,164.00
Precure, George A.,* Choctaw	.....	.....	5,300.92
Phelps, Lula E.,* Oklahoma City	.....	.....	8,638.07
Pharoah, O. J., Henryetta	.....	.....	4,860.12
Priboth, F. F.,* Blackwell	1,800.90	Gas	2,784.30
Priboth, Lillie M.,* Blackwell	1,813.27	.....	2,801.97
Powers, M. F. and Anna L.* Tulsa	.....	.....	24,752.56
Powers, M. F.,* Tulsa	.....	.....	5,208.67
Patterson, Mrs. Leona L.,* Duncan	2,100.86	.....	2,502.44
Pugh, M. W., Marlow	.....	.....	5,635.42
Q			
Quimby, John,* Montebello, Calif.	.....	.....	2,325.45
R			
Reliance Oil Co., Houston, Tex.	3,994.65	.....	4,586.38
Reliance Oil Co. of Oklahoma, Houston, Tex.	4,100.40	.....	4,950.08
Reliance Oil Co. of Oklahoma, Houston, Tex.	.....	Gas	1,720.72
Reserve Petroleum Co., Tulsa	17,311.63	.....	22,411.75
Reserve Petroleum Co.,* Tulsa	1,303.55	.....	1,929.21
Royalties Management Corp.,* New York, N. Y.	.....	.....	15,185.13
Royalties Trustee Corp.,* Wilmington, Del	.....	.....	7,054.66
Reiter-Foster Oil Corp.,* Tulsa	1,453.68	.....	2,396.21
Reiter-Foster Oil Corp., Tulsa	43,424.19	.....	57,393.02
Reiter-Foster Oil Corp., Tulsa	.....	Gas	362.91
Royalties & Standardshares, Ltd., Toronto, Ontario	.....	.....	2,146.48
Rockland Oil Co., Ardmore	22,517.35	.....	24,498.79
Rockland Oil Co., Ardmore	.....	Gas	223.98
Riverland Co., Tulsa	7,745.04	.....	11,219.92
Riverland Co., Tulsa	.....	Gas	389.63
Ramsey Petroleum Corp., Oklahoma City	80,467.65	30,928	89,260.87
Ryan Consolidated Petroleum Corp., Tulsa	4,345.16	.....	5,894.85
Reed & Harmon, Nowata	5,829.08	.....	7,303.62
Reynolds Oil & Refining Co., Oklahoma City	7,736.20	.....	10,664.43
Reynolds Oil & Refining Co., Oklahoma City	.....	Gas	1,232.83
Regal Oil & Gas Co., Tulsa	16,868.94	.....	22,578.69
Red Bank Oil Co., Tulsa	43,997.32	.....	55,806.57
Red Bank Oil Co., Tulsa	.....	Gas	1,232.83
Rena Royalty Co.,* Tulsa	1,933.11	.....	3,670.05
Reynolds and Unruh, Wichita, Kans.	20,274.48	.....	28,051.77
Ralph, B. B.,* Kansas City, Mo.	.....	.....	2,474.65
Regan, L. E.,* Shawnee	.....	.....	2,920.48
Rowe, Edna Bockler,* Hibbing, Minn.	2,052.23	.....	3,245.57
Reed, Frank H. and Isabella,* Neosho, Mo.	.....	.....	50,585.12
Reed, Frank H.,* Neosho, Mo.	.....	.....	54,566.47
Reed, Isabella S.,* Neosho, Mo.	.....	.....	11,810.99
Richardson, D. A., Oklahoma City	25,956.86	.....	35,064.43
Rowe, E. M.,* Cyril	19,282.46	.....	22,124.86
Randall, W. S., Oklahoma City	6,325.63	.....	5,361.80
Reynolds, M. E.,* Oklahoma City	.....	.....	4,173.10
Reade, C. M.,* Mexico, Mo.	.....	.....	2,695.35
Richards, C. L.,* Tulsa	5,294.55	.....	5,875.05
Rutz, Jake, Oil Co., Morris	7,881.09	.....	9,222.89
Richey, Dr. S. M.,* Tulsa	.....	.....	4,765.83
Robins, J. W., Fort Worth, Tex.	6,657.93	.....	6,604.65
Replogle & Johnston,* Oklahoma City	.....	.....	27,520.49
Replogle, D.,* Oklahoma City	.....	.....	3,290.51
Replogle, Jamie,* Oklahoma City	.....	.....	4,658.54
Roper, H. C.,* Ada	.....	.....	3,234.91
Roth, C. E., Independence, Kans.	4,002.78	.....	5,229.90
Rogers, Leslie,* Tulsa	3,588.36	.....	5,252.19
Rogers, Leslie, Tulsa	.....	Gas	576.85
Ray, Joe, Chickasha	.....	.....	6,318.82
Ray, Joe and Ida,* Chickasha	.....	.....	2,719.25
Royalty Corp. of America,* Tulsa	.....	.....	3,379.66
Rogers, Calloway and Rosa,* Earlsboro	.....	.....	2,122.35
Rogers, Calloway and Rosa,* Earlsboro	.....	.....	5,304.00
Rex Oil Co., Winchester, Ky.	.....	.....	6,209.53
Reed, Mrs. Eulahmae,* Wewoka	.....	.....	2,897.58
Ranola Oil Co.,* Enid	.....	.....	3,229.62
Rogers, B. H.,* Oklahoma City	.....	.....	19,884.35
Rogers, W. G.,* Oklahoma City	.....	.....	2,050.38
Rogers Oil & Gas,* Oklahoma City	.....	.....	17,175.10
Robinson, E. L. and Gibson-Zahniser Co., Tulsa	4,069.99	1,372	5,855.01
Robinson, E. L., Tulsa	10,418.67	.....	12,878.35
S			
Superior Oil Corp. by John Rogers, receiver, Tulsa	135,103.35	.....	178,320.49
Superior Oil Corp., Tulsa	.....	361,986	11,571.24
Shell Petroleum Corp., St. Louis, Mo.	799,413.29	.....	1,067,715.18
Shell Petroleum Corp., St. Louis, Mo.	.....	2,971,314	78,680.29
Skelly Oil Co., Tulsa	766,207.53	.....	1,000,235.19
Skelly Oil Co.,* Tulsa	6,912.42	.....	9,088.38
Skelly Oil Co., Tulsa	.....	2,016,376	46,996.49
Southwest Production Co., Bristow	.....	140,251	11,965.81
Sure Oil Corp., Tulsa	4,020.75	.....	5,118.15
Sure Oil Corp., Tulsa	.....	3,281	164.08
Sands Petroleum Corp., Tulsa	11,182.07	.....	15,325.83
Sands Petroleum Corp., Tulsa	.....	Gas	203.43
Standard Royalties of Canada, Inc., Toronto, Canada	.....	.....	78,868.02
Standard Royalties of Canada, Inc., Toronto, Canada	.....	Gas	2,777.29
Savoy Oil Co., Tulsa	6,763.58	969	7,644.24
Shasta Oil Co., Wichita Falls, Tex.	143,679.52	.....	137,773.89
Shasta Oil Co., Wichita Falls, Tex.	3,688.51	.....	3,645.28
Slick, T. B., Clarion, Pa.	184,829.98	.....	250,497.90

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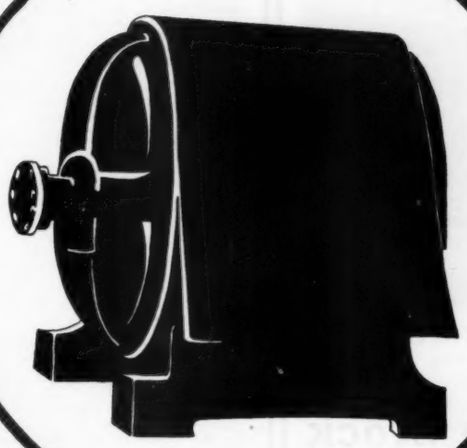

ELECTRIC MOTORS

The oil industry has proven to be a profitable field for the manufacturers of electric motors. A check up on the space used by manufacturers of electric motors in the first six months of this year reveals the following:

	PAGES
THE OIL AND GAS JOURNAL	38¾
Second Publication	30
Third Publication	3
Fourth Publication	3
Fifth Publication	2

Advertising rates and other information will be gladly furnished upon request.

The OIL and GAS JOURNAL

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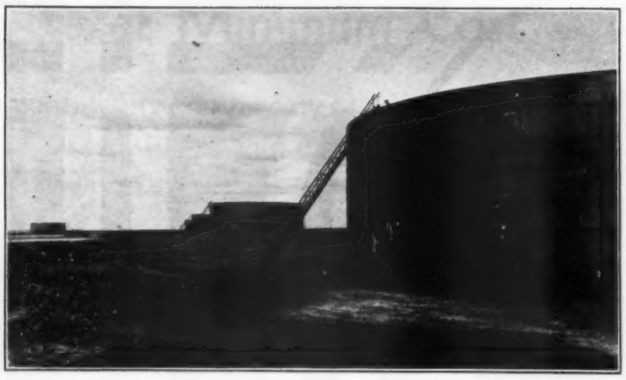
PITTSBURGH (DES MOINES)
Steel Storage Tanks

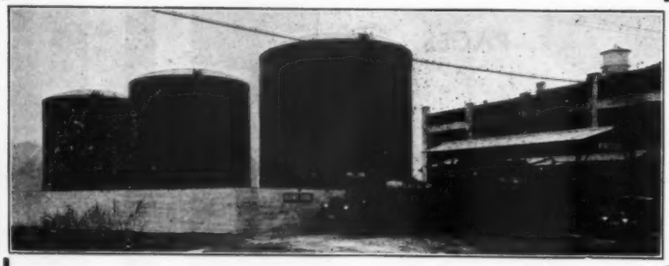


A group of PDM field erected oil storage tanks for the Cromwell-Franklin Oil Company, Oklahoma City, Okla.

Quick Service from Stock

Two big modern fabricating plants—one at Pittsburgh and one at Des Moines—facilitate quick deliveries of Pittsburgh-Des Moines oil storage tankage in either eastern, southwestern or Pacific Coast fields. Standard sizes and fittings are carried in stock at both plants.

PDM Engineers and Tank Builders design and fabricate oil tanks ranging in size from 60 gallons to 80,000 barrels capacity. Steel tanks can also be supplied for the economical storage of fuel oils, gasoline, chemicals and acids, and water.



Three big 2,200-barrell PDM fuel oil storage tanks at the Bradley Beach bulk supply station of Burns Brothers, New York City coal and fuel dealers. Each tank measures 25 feet in diameter by 25 feet 3 inches high.

What are your contemplated steel storage requirements? Send our engineers your detailed specifications. We shall be pleased to submit quotation on your needs.

Pittsburgh-Des Moines Steel Co.

3413 Neville Island, Pittsburgh — 1225 Praetorian Bldg., Dallas — 915 Tuttle St., Des Moines

New York San Francisco Seattle Chicago Atlanta

OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

Name and address—	Barrels	M. feet	Amount
Slick, T. B., Clarion, Pa.	.....	489,338	19,216.42
Slick, T. B.,* Clarion, Pa.	13,347.49	.....	18,640.35
Slick, T. B.,* Clarion, Pa.	.....	.....	1,073.06
Slick, T. B., estate, deceased,* Clarion, Pa.	10,346.09	.....	14,287.93
Slick, T. B., estate, deceased, Clarion, Pa.	.....	Gas	926.74
Slick, T. B., for William H. Atkinson, Clarion, Pa.	37,400.42	.....	52,590.95
Slick, T. B., for William H. Atkinson, Clarion, Pa.	42,298.28	.....	59,734.95
Slick, T. B., estate, deceased, Clarion, Pa.	183,427.51	.....	252,144.99
Slick, T. W., estate, deceased,* Clarion, Pa.	.....	Gas	926.74
Slick, T. B., for Anderson-Prichard Co., Oklahoma City	23,037.51	.....	30,766.44
Slick, T. B., Oklahoma City	.....	66,227	563.46
Slick, T. B., estate, for Anderson-Prichard	27,778.01	.....	37,166.92
Sinclair Oil & Gas Co., Tulsa	3,462,849.96	.....	4,725,368.92
Sinclair Oil & Gas Co., Tulsa	.....	Gas	191,072.92
Sinclair Oil & Gas Co., Tulsa (suspense)	.....	.....	4,443.20
Sinclair, H. F.,* New York, N. Y.	.....	.....	7,949.29
Shaffer, C. B., Chicago, Ill.	14,254.57	.....	16,453.73
Shaffer, J. C., Inc., Oklahoma City	.....	.....	45,320.20
Schermerhorn, J. B., Inc., Minneapolis, Minn.	59,768.78	.....	72,179.14
Schermerhorn, J. B., Inc.,* Minneapolis, Minn.	2,845.80	.....	3,530.84
Schermerhorn, J. B., Inc., Minneapolis, Minn.	2,687.31	.....	6,618.48
Schermerhorn-Ardmore Co., Minneapolis, Minn.	82,051.87	.....	91,612.10
Southern Oil Corp. of America, Winfield, Kans.	5,159.66	.....	6,292.66
Slab Oil Co., Ardmore	8,488.53	.....	12,709.46
Sarasota Oil Co., Ardmore	2,891.24	.....	3,143.01
Sterling Oil & Gas, Tulsa	4,248.13	.....	5,132.84
Sterling Oil & Gas, Tulsa	.....	Gas	380.15
Skelton-Moore Oil Co., Bartlesville	5,308.56	.....	6,656.70
Simms Oil Co., Dallas, Tex.	57,296.06	.....	80,742.03
Simms Oil Co., Dallas, Tex.	.....	77,006	2,578.07
Sturm Drilling Co., Ardmore	11,678.31	.....	14,943.70
Sampson Oil Co., Tulsa	4,023.90	.....	5,042.58
Sampson Oil Co., Tulsa	.....	17,338	272.12
Selby, J. L., Muskogee	6,326.17	.....	7,938.63
Selby Oil & Gas Co., Tulsa	24,404.69	15,330	29,431.59
Selby Oil & Gas Co.,* Tulsa	.....	.....	4,559.66
Southland Royalty Co.,* Ponca City	Oil	.....	50,747.45
Southland Royalty Co.,* Ponca City	.....	Gas	4,579.01
Snowden & McSweeney Co., New York, N. Y.	37,826.48	Gas	45,939.86
Shoreline Oil & Gas Co., Tulsa	17,389.12	.....	23,742.79
Sheridan Oil Co., Tulsa	12,051.87	.....	14,566.70
Sheridan Oil Co., Tulsa	.....	26,984	3,024.46
Silurian Oil Co., St. Louis, Mo.	115,549.93	.....	142,529.57
Silurian Oil Co., St. Louis, Mo.	.....	77,801	3,579.05
Shepherd, J. D.,* Shawnee	.....	.....	3,683.98
Shepherd, Dan, guardian,* Shawnee	.....	.....	1,993.13
Seminole Royalty Co.,* Oklahoma City	4,215.41	12,175	6,402.54
Stamper, Jennie,* Oklahoma City	.....	.....	7,934.06
Spencer, Alice and T. J.,* Wewoka	.....	.....	2,715.66
Sparks, Harriett W.,* Shawnee	.....	.....	2,122.58
Snedden, George W., Tulsa	26,611.63	.....	43,886.48
Smith, Charles R., Jr., Ardmore	4,752.32	.....	6,274.80
Smith, Marie S., Ardmore	5,893.14	.....	7,843.86
Smith, Mrs. Elizabeth,* Moore	4,291.39	.....	5,828.64
Smith, Thomas H.,* Denver, Colo.	.....	.....	15,130.76
Schmidt, H. E.,* Columbus, Ohio	.....	.....	6,004.95
Shertzer, C. P., Dewey	5,458.92	.....	6,163.72
Sultan, R. H., Walters	.....	.....	45,320.00
Shields, W. J.,* Fort Worth, Tex.	.....	.....	3,726.86
Sproat, Henry,* Toronto, Ontario	.....	.....	2,599.89
Swan, F. P.,* Konawa	.....	.....	2,024.05
Slough, E. D.,* Ardmore	.....	.....	2,427.25
Stamper, O. E.,* Washington, D. C.	.....	.....	2,292.14
Scott, Lucy B.,* Holdenville	.....	.....	2,238.28
Stillwater Natl. Bank, Admr. estate of W. E. Berry, Stillwater	.....	.....	10,117.10
Sullivan, M. M.,* Madill	.....	.....	2,974.66
Spainard, Elizabeth and Johanna,* Haskell	.....	.....	7,181.69
Stekoll, Harry, Tulsa	11,881.60	.....	16,300.58
Sowards, Fred and Willard,* Stroud	.....	.....	2,097.24
Sangster, Joe B.,* Earlsboro	.....	.....	2,326.10
Stuart, Phil N.,* Shawnee	.....	.....	2,003.20
Seay, Delbert,* Waurika	.....	.....	7,031.29
Seay, O. W., estate,* Ryan	.....	.....	8,173.66
Seay, Clyde, W. D.,* Oscar	.....	.....	14,115.73
Shimp, Ira C.,* Blackwell	.....	.....	4,887.88
Sykes, C. E.,* Ardmore	.....	.....	2,336.17
Summers, Mrs. George M.,* Tonkawa	.....	.....	2,208.13
Sudik, Vincent,* Oklahoma City	.....	.....	13,739.60
Schonwald, Juna,* Oklahoma City	.....	.....	3,049.95
Sparks, L. O.,* Oklahoma City	.....	.....	2,356.75
Sparks, L. O.,* Oklahoma City	.....	.....	2,356.80
Standoline Crude Purchasing Co., formerly the Sinclair Crude Co. (suspense)	.....	.....	261,474.35
Simpson-Fell Oil Co., Ardmore	18,587.37	.....	21,299.17
Simpson-Fell Oil Co., Ardmore	.....	9,036	177.69
Sneed Royalty Co.,* Tulsa	.....	.....	4,659.64
Springer, E. R.,* Tatum	.....	.....	8,360.66
Slogan, Agnes O.,* Falls City, Neb.	.....	.....	5,500.80
Smith, N. Bert,* Oklahoma City	.....	.....	6,079.01
Smith, N. Bert, Royalty Trust, Oklahoma City	Oil	.....	52,464.31
Smith, N. Bert, Royalty Trust, Oklahoma City	.....	Gas	1,514.75
Snell, Katie, nee Brown,* Dustin	.....	.....	2,930.54
Signal Oil Co., Tulsa	30,335.58	.....	41,659.57
Sunray Oil Co., Tulsa	181,229.85	.....	209,544.29
Sunray Oil Co., Tulsa	525.43	.....	638.53
Sunray Oil Co., Tulsa	.....	Gas	22,102.77
Sunray Oil Co.,* Tulsa	.....	.....	18,892.69
T			
Tidal Oil Co., Tulsa	405,737.05	.....	510,989.00
Tidal Oil Co., Tulsa	.....	Gas	16,452.15
Tidal Oil Co.,* Tulsa	7,934.74	.....	9,323.05
Tidal Oil Co.,* Tulsa	.....	Gas	612.66
Texas Pacific Coal & Oil Co., Thurber, Tex.	46,102.76	.....	39,784.99
Thlocco Oil Co., Tulsa	8,756.04	.....	12,214.54
Thlocco Oil Co., Tulsa	.....	Gas	842.41
Tiger Mountain Oil Co., Tulsa	2,864.27	.....	3,620.34
Turman Oil Co., Tulsa	126,178.53	.....	169,053.86
Turman Oil Co., Tulsa	.....	212,083	10,118.24
Tulsa Oil Co., Tulsa	.....	.....	12,844.68
Twin State Oil Co., Tulsa	559,798.69	.....	471,251.20
Twin State Oil Co., Tulsa	.....	Gas	18,156.00
Twin State Oil Co., Tulsa	2,945.63	.....	4,674.41
Treveyn Oil Co., Duncan	.....	.....	59,878.60
Theimer, B. J.,* Oklahoma City	.....	.....	23,970.38
Theimer, Elizabeth B.,* Oklahoma City	.....	.....	8,239.00
Truby, M. L., Royalty Corp.,* Independence, Kans.	1,809.50	.....	2,572.27
Truby, M. L., Royalty Corp., Independence, Kans.	.....	Gas	192.99
Trosper Park Royalty Owners, by First Natl. Bank & Trust Co., Oklahoma City	.....	.....	37,736.33
Trosper, Elizabeth Jane,* Oklahoma City	3,521.49	.....	5,260.45
Trosper, L. M.,* Oklahoma City	7,913.63	.....	10,684.54
Trosper, Clarence,* Oklahoma City	5,490.01	.....	7,530.86
Trosper, Frank,* Oklahoma City	.....	.....	2,095.26
Trosper, D. B.,* Oklahoma City	18,955.40	.....	27,106.22
Tull, Vida M.,* Oklahoma City	5,541.84	.....	8,737.77
Tawes, A. W.,* Crisfield, Md.	.....	.....	2,176.29
Trail, C. R., Sapulpa	.....	.....	6,350.34
Tomlin, R. E.,* Ada	.....	.....	13,166.29
Thompson, William P.,* Tulsa	3,907.85	.....	5,181.07
Thompson, Roy,* Tulsa	3,874.41	.....	5,140.23
Thompson, S. F.,* Okemah	.....	.....	3,194.81

(Continued on Next Page)

OKLAHOMA PRODUCTION, THIRD QUARTER, 1930

Name and address—	Barrels	M. feet	Amount
Templeton, M. E.,* Phoenix, Ariz.	.....	.....	8,713.68
Telford, Jane B.,* Chandler	.....	.....	6,361.57
Tucker, F. E.,* Ardmore	.....	.....	2,130.33
Taylor, Charles H.,* Oklahoma City	.....	.....	2,273.12
Taylor, Dr. Joseph C.,* New York City	.....	.....	2,814.77
Townsend, M. T.,* Ada	.....	.....	3,099.33
Transcontinental Oil Co., Tulsa	60,925.78	.....	78,786.50
Transcontinental Oil Co., Tulsa	.....	Gas	9,216.47
Texas, The, Company, Prod. Dept., Tulsa	983,938.88	.....	1,285,332.47
Texas, The, Company, Prod. Dept., Tulsa	.....	Gas	80,793.21
Texas, The, Company, Prod. Dept.,* Tulsa	6,104.18	.....	8,794.10
Texas, The, Company, Prod. Dept.,* Tulsa	.....	Gas	683.31
U			
U. S. Royalties Corp.,* New York City	.....	.....	5,440.46
United Eight Oil Trust, by H. B. Fell, receiver, Ardmore	4,211.31	.....	5,714.73
Umpleby, J. B.,* Oklahoma City	3,074.80	.....	4,164.62
Union Oil & Mining Co., Tulsa	5,058.86	.....	6,796.85
Utilities Production Corp., Tulsa	.....	771,642	39,476.33
Umburn, Gillia, Weleetka	.....	.....	5,023.51
Unsell, Mary Jane,* Amarillo, Tex.	.....	.....	5,810.93
V			
Viersen Oil & Gas,* Okmulgee	7,409.86	.....	10,398.96
Viersen, A. A.,* Okmulgee	13,922.82	Gas	21,360.89
Viersen, Sam K.,* Okmulgee	.....	.....	4,128.75
Vernon Oil & Gas, Blackwell	.....	.....	7,995.95
Valley Osage Oil Co., Tulsa	17,166.24	.....	21,029.64
Vacuum Oil Co., Houston, Tex.	104,818.70	.....	154,085.18
Vacuum Oil Co., Houston, Tex.	.....	346,046	5,541.06
Venmex Oil Co., Wichita Falls, Tex.	32,955.05	.....	37,035.93
Vassar, Amanda,* Ponca	1,485.10	.....	2,312.51
Vance, S. E.,* Tulsa	1,770.57	.....	2,971.08
Vance, Mary E.,* Tulsa	2,266.99	.....	3,338.54
Voorhees, Leon G.,* Oklahoma City	.....	.....	9,571.68
Vencel, Alex,* Oklahoma City	.....	.....	16,567.16
Varnum, Eliza P.,* Shawnee	6,112.40	.....	8,306.00
Varnum, W. F.,* Shawnee	17,833.54	.....	12,524.85
Van Meter, Phillip Lehman,* Wichita, Kans.	.....	.....	4,907.59
W			
Wentz, L. H., Ponca City	139,560.54	.....	211,706.72
Wentz, L. H., Ponca City	.....	Gas	6,737.05
Wentz, L. H.,* Ponca City	4,077.74	.....	6,048.46
Wentz Oil Corp., Ponca City	645.25	.....	943.09
Western Oklahoma Gas Co., Fort Smith, Ark.	.....	110,693	11,069.30
Westland Oil Corp., Tulsa	16,762.99	.....	22,331.55
Westland Oil Corp., Tulsa	.....	Gas	313.04
Wellsville Oil Co., Wellsville, N. Y.	10,084.93	.....	12,271.20
Watchorn Oil & Gas Co., Oklahoma City	7,339.70	.....	10,506.45
Washington Royalties Co.,* Tulsa	11,883.86	.....	16,185.68
Wolverine Petroleum Corp., St. Louis, Mo.	160,317.54	.....	193,323.38
Wolverine Petroleum Corp., St. Louis, Mo.	.....	250,654	12,037.33
Wilcox, H. F., Oil & Gas Co., Tulsa	210,824.84	.....	284,141.44
Wilcox, H. F., Oil & Gas Co., Tulsa	.....	Gas	9,955.15
Warner-Caldwell Oil Co., Titusville, Pa.	30,507.47	.....	37,108.61
Warner-Caldwell Oil Co., Titusville, Pa.	.....	Gas	690.44
Wright, Archie K.,* Muskogee	.....	.....	2,216.92
Wright-Smith Oil Co., Oklahoma City	18,596.13	.....	25,257.47
Wright, James,* Bristow	.....	.....	2,710.33
Wright, J. H., estate, Sapulpa	17,280.29	.....	22,807.76
Wright, J. H., estate, Sapulpa	.....	Gas	1,421.40
Winkler & McQueen, Duncan	7,839.78	.....	9,918.37
Westheimer & Daube, Ardmore	106,276.85	.....	128,390.10
Westheimer & Daube, Ardmore	.....	Gas	3,082.42
Westheimer & Daube,* Ardmore	15,708.82	.....	17,187.77
Westheimer & Daube,* Ardmore	.....	Gas	471.09
Wiser Oil Co., Sistersville, W. Va.,	94,313.16	.....	112,984.37
Winona Oil Co. of Delaware, Tulsa	38,500.93	.....	51,898.09
Whitehill, Howard J., Tulsa	3,957.73	.....	4,800.44
Whitehill, H. J., and H. C. Weible, Tulsa	11,253.90	.....	13,778.78
Whitehill Oil Corp., Tulsa	17,790.27	.....	21,879.88
Whitehill Oil Corp., Tulsa, for others	.....	.....	8,255.68
Whitehill Oil Corp.,* Tulsa	1,969.12	.....	2,597.41
Wittmer Oil & Gas Properties, Pittsburgh, Pa.	3,995.53	.....	5,369.52
Wittmer Oil & Gas Properties, Pittsburgh, Pa.	.....	Gas	402.71
Walker, E. A.,* Oklahoma City	13,201.00	.....	16,163.51
Walker, E. A.,* Oklahoma City	.....	Gas	499.35
Wells, W. B.,* Weleetka	.....	.....	2,056.23
Welsh, J. L.,* Blackwell	1,457.41	.....	2,169.11
Welsh, Carrie B.,* Blackwell	1,457.41	.....	2,135.11
Wilson, Benton,* Greenfield, Mo.	.....	.....	3,890.63
Wilson, Benton,* Greenfield, Mo.	.....	.....	4,138.31
Wheeler, John W.,* Oklahoma City	.....	.....	9,848.45
Weeks, Margaret S., Ardmore	4,752.31	.....	6,274.77
Watrous, Ernest,* Shawnee	.....	.....	4,934.36
Willmott, John W.,* San Diego, Calif.	.....	.....	14,961.45
Warren, Harry G.,* Chickasha	.....	.....	3,963.61
Warren, Charlie R.,* Oklahoma City	.....	.....	3,950.24
Warren, Margaret,* Oklahoma City	.....	.....	3,964.50
Warren, Chester L.,* Oklahoma City	.....	.....	3,963.04
Ward, Grace L.,* Wilson	.....	.....	2,681.82
Witwer, L. W.,* Tulsa	.....	.....	2,107.91
Wollcott, C. W., guardian,* Coweta	.....	.....	2,136.68
Welfeldt, Abe and Sadie,* Shawnee	.....	.....	2,992.25
Warden, Frank,* Oklahoma City	.....	.....	2,260.90
Walsh Oil Co., Tulsa	5,581.13	.....	6,772.32
Wallace, J. E., Okmulgee	.....	.....	8,724.99
Wade, Laura B.,* Cement	.....	.....	2,509.62
Wagner, Walter, Shidler	.....	.....	15,414.39
Watkins, F. E., estate,* Waurika	4,294.77	.....	4,551.30
Wood, Jim,* Konawa	.....	.....	7,253.34
Woods, W. E.,* Cox City	.....	.....	2,357.28
Wood, Maud,* paid by superintendent of Five Civilized Tribes	.....	.....	5,197.92
Wood, Roy,* Oklahoma City	.....	.....	11,990.00
Wood Oil Co., Tulsa	9,776.58	.....	13,832.65
Woodworth, W. W.,* Ringling	.....	.....	2,608.04
Woodworth, Agnes O., nee Gafney,* Guthrie	.....	.....	3,150.10
Williams, C. D.,* Ardmore	.....	.....	2,648.92
Y			
York Petroleum Co.,* Muskogee	7,167.97	.....	9,627.35
York Petroleum Co.,* Muskogee	.....	Gas	451.55
Yoakam, C. A.,* Tulsa	.....	.....	2,264.14
Youngblood, L. S.,* Oklahoma City	.....	.....	2,639.04
Z			
Zimmerman, L. W., Chicago, Ill.	20,444.16	11,292	21,380.51

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

GRANT COUNTY

Bu-Vi-Bar and Amerada's No. 1 Hurst, C SW Sec. 25-26-5w ..... Wilcox 5,847-71 ft.; water; abnd.

GREER COUNTY

French's No. 1 Murphy, SW NW SE Sec. 23-7-21w..... Shut down 500 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w ..... Shut down 2,593 ft

For AJAX IDEAL ROLLER BEARING engine we now provide the new— BADGETT SPECIAL STEAM LUBRICATOR

SAVES SIX WAYS!

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3. SHUT-DOWNS
4. DELAYS
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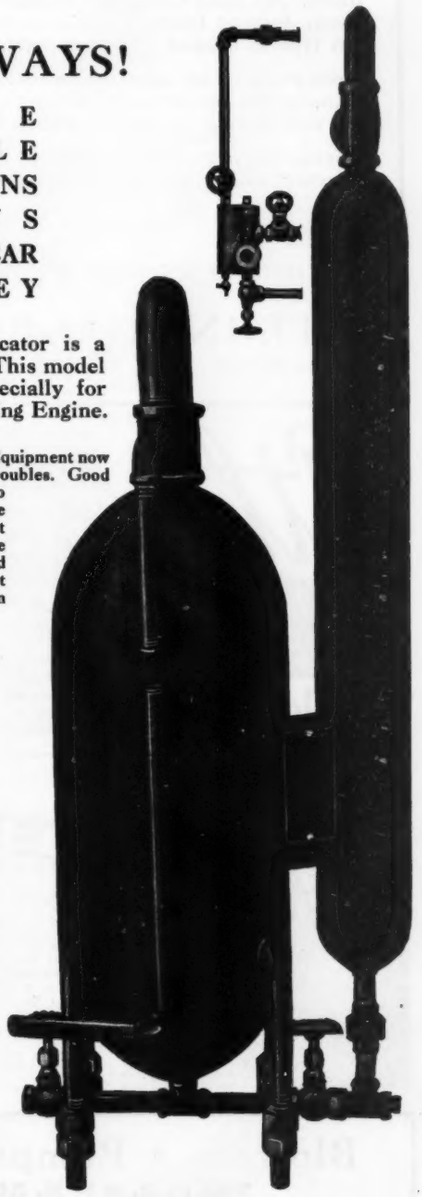

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J. Henry, Duncan, Okla.
Summit Drilling Co., Tulsa
G. J. Beard, Duncan, Okla.
Hubbard & Wofford, Tulsa
Herman Wagener, Oklahoma City
Byers Drilling Co., Oklahoma City
A & B Drilling Co., Oklahoma City
Capitol Drilling Co., Oklahoma City
Prince & Prince, Electra, Texas
Clark & Cowden, Duncan, Okla.
Independent Oil Co., Oklahoma City
G. E. Gilberth, Oklahoma City
Golden & Cochran, Wink, Texas
Haynes Drilling Co., Wink, Texas
Murphy & Graham, Seminole, Okla.
Steinberg & Yerkee, Seminole, Okla.
Fain-McGaha, Wichita Falls, Texas
Alleson & Clevinger, Seminole, Okla.
Winkler & McQueen, Duncan, Okla.
Reynold Drilling Co., Seminole, Okla.
Manahan Drilling Co., Seminole, Okla.
Herndon Drilling Co., Seminole, Okla.
Hartman & Hamilton, Seminole, Okla.

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CHICKASHA, OKLAHOMA

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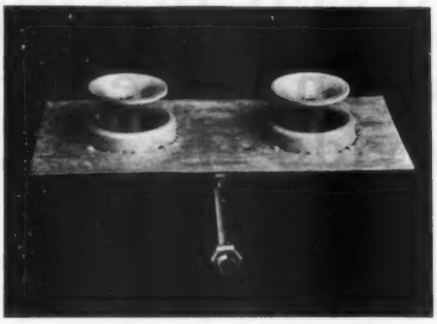

These burners produce a blue, clear orange or colorless flame. No Flue Cleaning—Perfect Combustion—No Flash Back. Inferno burners will save from 10 to 40 per cent in any type of heating or power plant.

Upon request, our combustion specialist will be glad to recommend the proper type burner for any purpose and burners will be sent for demonstration to any location.

Inferno Burners excel because of their simple, rugged construction and no parts to be replaced.

As hot as its name.

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INFERNO GAS BURNER CO.

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Ideal for heavy duty behind tractors, either singly or in train. • • • Made in 10, 15 and 20-ton capacities for hauling heavy loads where transportation over soft ground is a problem. • • • • • • • Write for complete information.

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S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w..Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w.....Drilled plug 7,195 ft; no show; cleaning out.

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .....20,000,000 ft. gas 5,350-5,400 ft., total depth 8,589 ft.; shut down; sprayed 50 bbls. gasoline.

HASKELL COUNTY

I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21.....Drlg. 2,450 ft.
Mid-Western's No. 1 Poister, C NE SE Sec. 33-10-22..Shut down 4,297 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e.....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e .Abandoned 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11.....Shut down 1,645 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-6-10.....Shut down 4,270 ft.; cmtd. 6-in.

KAY COUNTY

Peters & Buckles' No. 1 Hayes, NW NE NW Sec. 24-28-3 .....Drlg. 120 ft.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 .....Shut down 50 ft.
Blackwell's Oil & Gas Co.'s No. 1 Harshman, Sec. 2-26-1w Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w..Shut down 1,175 ft.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w .....Drlg. 6,510 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w.....Drlg. 7,022 ft.

KIOWA COUNTY

Riley et al's No. 1 Grebb, SW NE Sec. 6-7-16w.....Drlg. 1,400 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE NW Sec. 23-9-24.....Wilcox 6,128-6,298 ft.; dry; plugged back to 5,426 ft.; comp. 5,401-5,550 ft.; 6,000,000 ft. gas.

LATTIMER COUNTY

Mid-Western Oil & Gas' No. 1 Bullo, C E half SW Sec. 3-6-19 .....Rig.
LeFlore Oil Co.'s No. 1 McBee, NW cor., Sec. 3-7-21....Shut down 3,601 ft.
Mid-Western's No. 1 Morris, C NW SE Sec. 12-6-21....1,562-1,650 ft.; dry; shut down 2,075 ft.
Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 .....Shut down 2,625 ft.

LINCOLN COUNTY

Mote et al's No. 1 Stafford, NW NE Sec. 32-17-4.....Location; abandoned.

LOGAN COUNTY

Slick and Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w..Drlg. 5,605 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4 w.Sand 4,919-42 ft.; made 870 bbls. 21 hrs. and 485 bbls. 24 hrs. the second 24 hrs.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Drlg. 5,576 ft.

McCLAIN COUNTY

Prairie's No. 1 Parkinson, SW NW Sec. 22-7-2w .....Drlg. 5,410 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19....Shut down 1,011 ft.

NOBLE COUNTY

Barnsdall's No. 1 Miksch, NW SW Sec. 12-21-1 .....Drlg. 3,035 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Shut down 4,127-57 ft.; water; plugged back to 3,151-85 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Shut down 3,690 ft.

OKLAHOMA COUNTY

L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w .....Shut down 5,515 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w .....Wilcox 6,697-6,771 ft.; shot with 90 qts. and 140 qts.; flowed 4o2 bbls.; shut in.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w.....Drlg. 6,882 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .....Shut down 6,700 ft.

OSAGE COUNTY

Millard & Stanley's No. 1, SE SW Sec. 4-28-7.....Rig.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 .....Rig.
Morgan & Flynn's No. 1 Freeman, NW cor. Sec. 1-20-5..Wilcox sand 3,645-78 ft.; water; abnd.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 .....Drlg. 910 ft.
L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3....Drlg. 3,143 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5..Rig.

PITTSBURG COUNTY

C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14.....Rig.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w...Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w...Shut down 2,905 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5...Location.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w.Shut down 130 ft.
Burns & Prince's No. 1 Deck SW cor. Sec 21 8 18 .....Rig.
Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w .....Shut down 280 ft.

WOODS COUNTY

Sinclair Oil & Gas Co.'s No. 1 Showalter, C SW SW Sec. 33-27-16w .....T. D. 7,280 ft.; plugged back to 6,730 ft.; shot 30 qts. 6,805-25 ft.; no results; plugged back to 4,885 ft.; shot 40 qts. 4,885-4,985 ft.; drlg. out bridge 4,900 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w .....Shut down 1,387 ft.
Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w .....Shut down 7,445 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Argus Prod. Co.'s No. 1 Fischer, C NW Sec. 29-6-14....Location.
Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18 .....Shut down 4,425 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e .....Spudded; shut down.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 .....Shut down 400 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10..Shut down 425 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .....Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e Shut down 485 ft.
Marshall's No. 2 Fee, C SW NW Sec. 26-5s-7 .....Shut down; 6-in. csg. 265 ft.

CARTER COUNTY

Camnen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Shut down 2,590 ft.

LOVE COUNTY

Hobbs et al's No. 1 Roberts, NE cor. SW sec. 20-6s-3w. Shut down 3,130 ft.

MARSHALL COUNTY

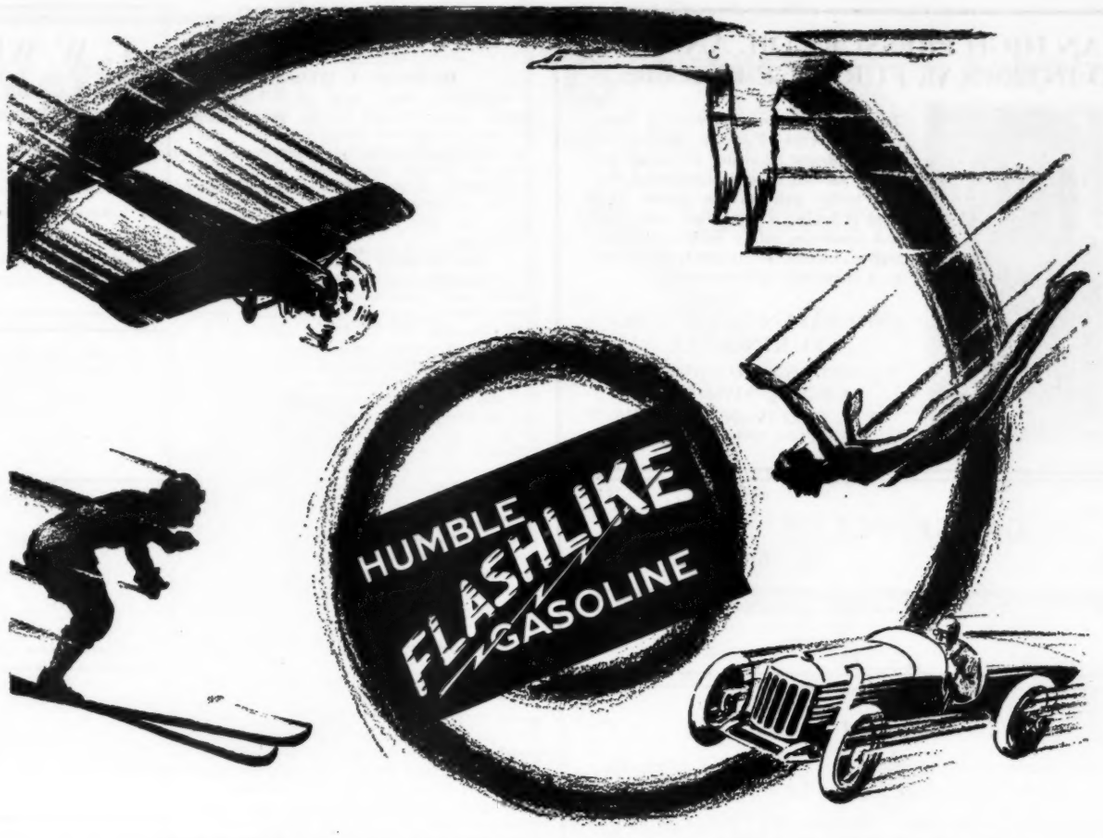
D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-5...Drlg. 1,210 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6. Rig.
Akers et al's No. 1 Spicer, SW SE Sec. 33-5s-7e... Shut down 370 ft.

McCURTAIN COUNTY

Milton et al's No. 1 Vase, SW NW Sec. 26-4s-21.....Shut down 2,287 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-15-7w .....Shut down 1,375 ft.
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n....Shut down 1,060 ft.



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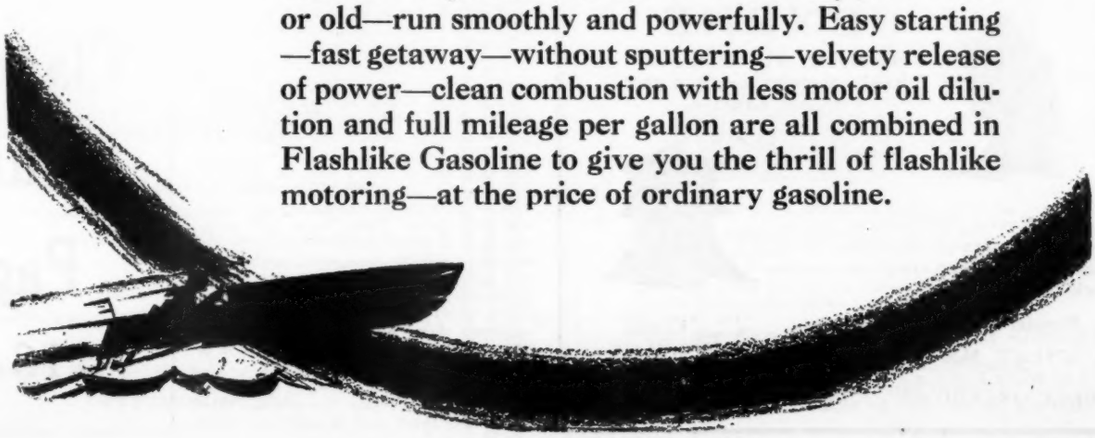
LABORATORY ANALYSIS		WHAT IT MEANS TO YOUR MOTOR
Initial Boiling Point	110 Maximum	Easy starting---First in the get-away---No sputtering
% distilled at 221° Fahr. % distilled at 284° Fahr. % recovery	25 Minimum 52 Minimum 97%	More power, long burning stroke, less gear shifting
End Point	400	Complete vaporization---complete combustion
Doctor Test	OK	Clean odor---never offensive
Corrosion Test	OK	No choking or corrosion of gas line
Color	Plus 25	Highly refined, clean, and clear
Sulphur	less than 1/10 of 1% Max.	No pitting of valves, or fouling of oil
Gum Test	OK	No resinous precipitate to clog carburetor

Flashlike Gasoline has been painstakingly endowed by the finest automotive laboratories in the world with those qualities needed to make any car—new or old—run smoothly and powerfully. Easy starting—fast getaway—without sputtering—velvety release of power—clean combustion with less motor oil dilution and full mileage per gallon are all combined in Flashlike Gasoline to give you the thrill of flashlike motoring—at the price of ordinary gasoline.



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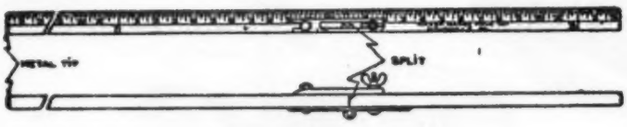

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GEOLOGIST INTERESTED IN ST. PETER SANDSTONE

By George A. Whitney

MARION, Ohio, Nov. 24.—Much interest is manifested in the possibilities of the finding of commercial gas and oil production in the St. Peter sandstone that lies directly underneath the Trenton limestone. A letter just received from Noble L. Wood, geologist, of Marion, Ohio, has this to say on the St. Peter formation:

"I have noticed in The Oil and Gas Journal the articles on southern Kentucky and Tennessee, and they are of much interest to me as it has always been my idea that the St. Peter sandstone or Calciferous, some place either in Kentucky or Tennessee, would produce oil or gas. The most conclusive evidence I have is the United States report Bulletin 661-D now possibly out of print, however, I have a copy, and it is by Eugene Wesley Shaw, published September 5, 1917. In this report he gives a log of a well on White Oak Creek, Estill County, Kentucky, where the St. Peter was encountered at 1,940 feet. However, in southern Kentucky and northern Tennessee there is a vast uncomformity where the Corniferous limestone and the Silurian has either eroded or was never deposited and the shale is deposited on the eroded surface of the Ordovician system, consequently the difference in depth to the St. Peter.

"The following is an exact copy of what Doctor Shaw states: 'The Calciferous until quite recently has not been known as a gas or oil bearing rock; it generally produces strong brines and mineral waters where drilled into. A well recently drilled at Elizabethtown, Hardin County, Kentucky, has produced some gas from this formation at a depth of 2,300 feet. There is a flow of Blue Lick water also in this well. Another well, on White Oak Creek, in Estill County, has gas from the same formation at a depth of 1,940 feet. The gas from this well has quite a rock pressure, and a reported measurement by a pitot tube gave a volume of a little over 300,000 feet per day. A second well completed on White Oak Creek struck a strong show of oil in the Calciferous at a little greater depth than the gas in the first well. The drilling was carried a little deeper and a strong flow of salt water encountered.'

"The above is just as I copied it from report. I know the field well and White Oak Creek where the locations were made were considerably down the dip of the structure and fault passing through Irvine and if I am not mistaken White Oak Creek is north of the fault zone in that field and a little northwest of Irvine. I know they did not obtain any production of commercial value north of the fault zone, therefore the logs of these two wells are just like hundreds of others off structure, and were condemned before they started.

"I have drilled a well on the Samuel Elliott farm of 250 acres on Crocus Creek (Cumberland County), on the southwest side of Brockman Dome, to a depth of 751 feet. The cave was high, 595 feet; upper Sunnybrook, only a light show, but at 360-80 feet a very nice show of oil and gas came in the hole; at 535 feet another show and 660 feet looked first a well and at 735 feet it was in a good sand with oil at 751 feet.

"We are going to drill another on this farm as soon as possible. And as I have the former production on Crocus Creek where the big wells were drilled in, I expect to put them back on the pump and drill others, and I sure am going to drill one to the St. Peter sandstone, as I drilled a well in Warren County, near the Willoughby farm lease, 15 miles southeast of Bowling Green where we encountered a white sand with considerable gas but no water of any kind. There is considerable leasing down on Crocus Creek and I know there still is a lot of oil down there, and quite a gas excitement, and we have plenty to show it is there.

"I find a well was drilled at Columbus, Ohio, termed the State House well. The top of St. Peter was recorded at 2,459

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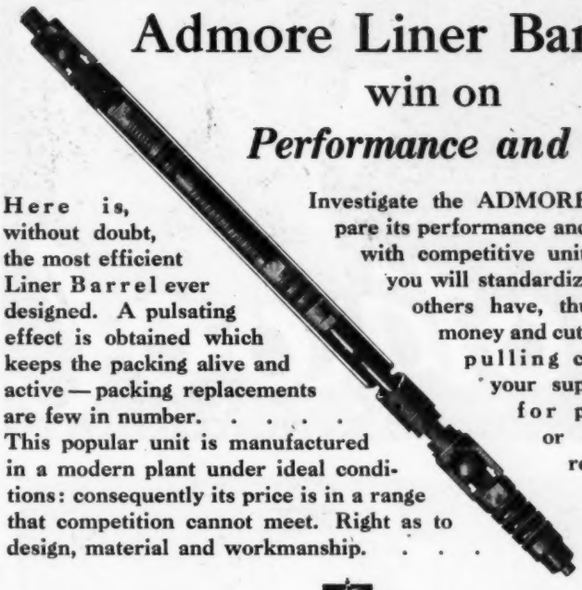

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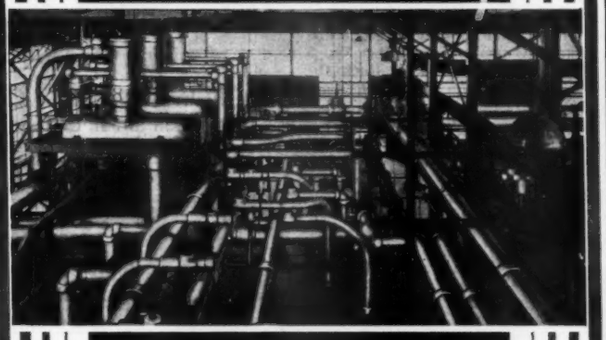

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feet and a white sand. I am of the opinion it will always show a coarse white sand in either Salt, Blue Lick, or dry gas. Oil would naturally change its color. I know wells on Kettle Creek you mention. I also think they are St. Peter sandstone or Potsdam sandstone of eastern New York, where it produces gas in paying quantities."

KENTUCKY FIELDS

(Continued from Page 68)

down. The Tri-County Field has been only partly tested and has some of the most productive territory within the State, but with better conditions the work will start again.

Only four completions were reported from Ohio County. James C. Ellis and others' No. 1 on the Magnolia Smith farm, in the Barnette Creek Pool, near Taffy, is reported at 100 bbls. initial from the Stray sand which has proven so productive in that field. Same parties' No. 1 on the Tom Coleman farm, near Magan Station, is reported good for 75 bbls. initial. The Kentucky Natural Gas Co.'s No. 4 on the Frank Reynolds farm, near Reynolds Station, is a 750,000-foot gas producer, while Fletcher and others' No. 1 on the Sim Edge farm is reported dry at 750 feet.

In Daviess County, Vickers Brothers and others made what is reported a 100-bbl. strike in No. 1 M. D. Wells farm in the Stray sand from 850 to 900 feet. The well produced the 100 bbls. the first 10 hours.

In the Calhoun Field of McLean County, the Ohio Oil Co.'s No. 3 on the G. B. and R. L. McManama farm, produced an initial of 50 bbls. at a depth of 1,138 feet.

In Henderson County, Jerry Oil Co.'s No. 4 B. W. Griffin farm, Niagara Pool, pumped but 3 bbls. the first 24 hours.

Eastern Kentucky

The best completion in the eastern Kentucky Field was the Petroleum Exploration Co.'s No. 8 on the Trabue heirs, District 35, Lee-Owsley Counties, and the First National Bank of Jackson brought in a 7-bbl. pumper in No. 6 on another Trabue heirs farm, same district.

M. D. Shearer drilled a dry hole in No. 6 on the Coyle heirs farm, District 3, Wayne County, and Bain & Hogue are drilling No. 3 Eli Phipps farm, same district. Smith Cameron is drilling No. 5 G. E. Bell farm, and Pigeon Rock Oil Co. is drilling No. 13 on the Stearns Coal & Lumber land, same district.

In Estill County, District 7, McEldowney, Bowser and others' No. 8 George Reed heirs farm was a duster. In District 8, same county, Cox and Gabbard's Nos. 4 and 5 are 1-bbl. pumpers. R. R. Friend and others have one of the same size on the Hiram Fowler farm. E. E. Edwards and Withers' No. 1 Buddy Flynn farm, same district, was dry as was Benton and others' No. 1 on the Jeff Scrivner farm.

In the Martha area of Lawrence County, unknown parties are drilling a deep test on the Fred King farm, District 11, being now down to a depth of 2,400 feet.

In Johnson-Magoffin Counties, District 25, the Cumberland Petroleum Co.'s No. 45 L. C. Bailey farm, pumped 5 bbls. initial from the Weir sand. In District 29 the Peoples Pittsburgh Trust Co.'s No. 3 Carter Wheeler farm, pumped 3 bbls. and same company is drilling No. 3 Paris Long farm, same district. In District 31, Hupp, Duff and others' No. 10 J. M. Frazier farm, pumped 10 bbls. the first 24 hours from the Weir sand.

ASPHALT PAVING CONFERENCE

Oil men have been invited to attend the ninth annual asphalt paving conference to be held in the Hotel Peabody, Memphis, Tenn., December 1 to 5, under auspices of the Asphalt Institute and the Association of Asphalt Paving Technologists. The program includes addresses by R. H. Aishton, president of the American Railway Association, "Co-ordination of Rail and Highway Transportation," and Capt. Frank M. Hawks, "An Aviator's Conception of Adequate Airport Sur facing."

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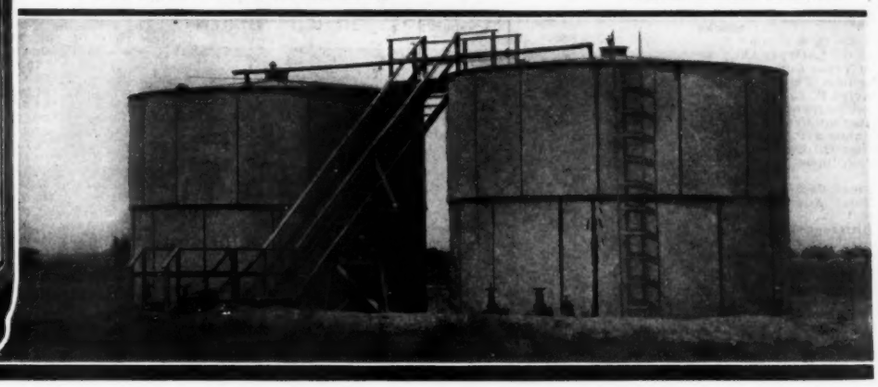

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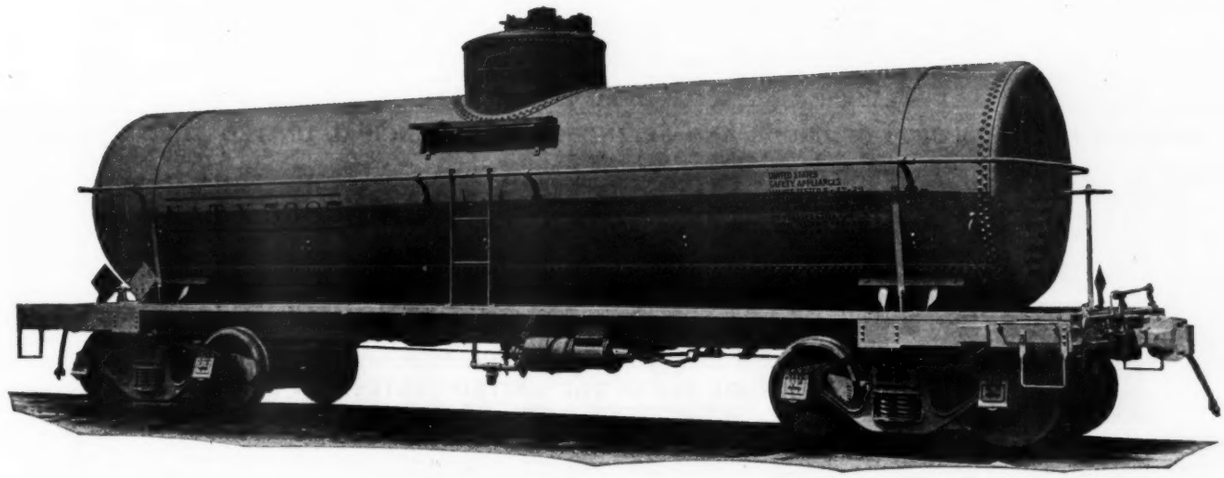

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Runs for the Month of September 1930

	Month bbls.	Daily average bbls.
Prairie P. L. Co.*	3,096,000	103,200
Gulf P. L. Co.	1,253,047	41,768
Texas P. L. Co.	597,863	19,929
Magnolia P. L. Co.	1,385,171	46,172
Empire P. L. Co.	1,821,332	60,711
Cosden P. L. Co.	832,711	27,757
Stanolind P. L. Co.*	2,835,000	94,500
Oklahoma P. L. Co.	2,206,399	73,547
Other lines*	5,860,000	196,000
Total September	19,907,520	663,584
Total August	20,759,207	669,651
Difference	851,687	6,067
Shipments		
Prairie P. L. Co.†	4,246,592	141,553
Gulf P. L. Co.	1,208,894	40,296
Texas P. L. Co.	1,292,472	43,032
Magnolia P. L. Co.	1,535,669	51,189
Empire P. L. Co.	2,164,403	72,117
Cosden P. L. Co.	989,219	32,974
Stanolind P. L. Co.†	3,264,938	108,831
Oklahoma P. L. Co.	2,515,372	83,846
Other lines*	5,010,000	167,000
Total September	22,227,564	740,918
Total August	23,829,712	768,701
Difference	1,602,148	27,783
Stocks		
Prairie O. & G. Co.*		37,050,000
Gulf P. L.-Gypsy Oil Co.		8,108,868
The Texas Company		4,130,059
Magnolia Petroleum Co.		5,821,224
Empire P. L. Co.		5,396,159
Mid-Continent Petroleum Corp.		3,705,319
Stanolind Crude Oil Pur. Co.*		20,300,000
Oklahoma P. L. Co.*		2,840,663
Carter Oil Co.		9,719,214
Other lines*		23,822,500
Total September		120,894,005
Total August		122,274,011
Difference		1,380,005

*Estimated. †Prairie and Sinclair shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF OCTOBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for September and October:

	Sept., 1930	Oct., 1930
Nat. Transit	126,408.01	135,934.22
S. W. Pa. P. L.	76,584.80	82,961.29
Eureka P. L.	286,627.14	329,128.04
Buckeye P. L. (Macksburg)	335,374.02	354,552.32
Buckeye P. L. (Cleveland)	11,061.63	12,508.84
Buckeye P. L. (Lima, etc.)	93,802.50	94,164.99
Indiana P. L.	5,054.52	4,483.25
Cumberland P. L.	179,527.92	172,752.31
N. Y. Transit	39,583.19	35,614.60
Tide Water P. L.	25,676.10	27,863.60
Pure Oil	191,912.84	189,448.04
Stoll Oil Ref.	3,317.59	19,496.16
Bradford Tran.	322,922.66	344,649.24
Total	1,697,851.92	1,803,576.80
Daily average	56,595.07	58,179.89

Note—Indian Refining Co. had other receipts of 307,070.32 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., 1930	Oct., 1930
Nat. Transit	484,508.49	479,245.86
S. W. Pa. P. L.	256,281.87	187,406.27
Eureka P. L.	244,918.35	247,221.25
Buckeye P. L. (Macksburg)	216,745.14	217,217.64
Buckeye P. L. (Cleveland)	1,712.02	2,200.10
Buckeye P. L. (Lima, etc.)	1,075,693.59	1,029,180.06
Indiana P. L.	1,128,187.89	548,201.97
Cumberland P. L.	136,896.24	126,573.84
Southern P. L.	66,892.64	69,576.30
N. Y. Transit	154,726.36	169,187.25
Northern P. L.	124,793.90	80,085.21
Tide Water P. L.	585,647.20	574,109.31
Pure Oil	183,063.50	274,485.43
Indian Ref.	373,510.38	334,226.70
Bradford Tran.	425,829.96	263,300.96
Tuscarora Oil	360,569.02	285,721.78
Total	5,819,974.55	4,887,939.93
Daily average	193,999.15	157,675.48

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of September and October:

	Sept., 1930	Oct., 1930
Nat. Transit	765,612.70	830,161.58
S. W. Pa. P. L.	542,827.03	543,474.82
Eureka P. L.	1,516,135.69	1,483,216.69
Buckeye P. L. (Macks. urg)	665,285.49	656,581.88
Buckeye P. L. (Cleveland)	66,500.27	65,770.92
Buckeye P. L. (Lima, etc.)	5,065,078.07	4,992,794.24
Indiana P. L.	759,036.08	795,428.98
Cumberland P. L.	548,890.67	521,527.42
Southern P. L.	294,744.69	265,170.20
N. Y. Transit	139,813.32	178,747.41
Northern P. L.	480,715.71	459,246.38
Tide Water P. L.	957,099.18	811,218.64
Pure Oil	520,059.95	433,436.65
Indian Ref.	88,060.52	61,037.68
Tuscarora	276,805.35	104,667.41
Brad Trans.	125,354.27	235,074.97
Total	12,812,018.99	12,437,565.87
Decrease	235,032.85	374,463.12

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October showing gross stocks of the above fields:

	Sept., 1930	Oct., 1930
Pennsylvania	3,921,022.36	3,961,667.74
Lima	828,284.49	845,272.27
Kentucky	596,275.33	594,637.03
Mid-Continent	6,946,872.38	6,611,577.52
Illinois	10,632.05	3,102.03
Michigan	508,932.40	421,299.28
Total	12,812,018.99	12,437,555.87

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1927	1928	1929	1930
January	56,209	52,904	51,749	75,907
February	61,298	57,002	51,833	79,256
March	63,247	57,485	54,252	76,688
April	60,927	56,812	58,444	84,536
May	60,284	62,067	59,902	80,548
June	62,757	58,230	52,833	75,430
July	58,674	57,144	66,087	68,921
August	60,870	57,745	66,087	54,291
September	60,285	53,487	67,315	56,595
October	147,080	58,100	76,093	58,179
November	57,275	53,865	74,831	.....
December	53,089	52,025	74,561	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1927	1928	1929	1930
January	141,227	146,465	165,721	217,623
February	138,534	167,368	159,387	224,355
March	133,777	156,833	161,474	223,846
April	140,227	172,935	169,737	241,845
May	144,594	180,559	184,281	248,383
June	149,772	188,024	185,404	234,401
July	151,850	189,470	194,763	207,094
August	188,653	192,853	184,946	205,506
September	144,213	194,138	201,214	193,999
October	147,036	176,000	191,367	157,675
November	150,975	176,898	202,748	.....
December	144,504	173,572	186,257	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1928	1929	1930
January	12,276,710	7,596,564	12,220,045
February	12,180,419	8,738,835	12,991,561
March	12,239,725	9,002,058	13,247,217
April	11,740,125	8,978,172	13,233,961
May	11,602,468	8,903,560	13,052,953
June	11,287,678	8,921,275	13,396,855
July	10,819,331	9,211,595	13,268,562
August	10,236,743	9,440,643	13,047,051
September	9,660,910	9,443,067	12,812,018
October	9,229,709	9,441,101	12,437,555
November	8,366,553	9,868,538	.....
December	7,539,555	11,252,953	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, October 31	1,991,058.92
Runs from wells	450,578.52
Other receipts	210,504.03
Regular deliveries	292,825.13
Other deliveries	296,877.49

The amount of Illinois oil run by the Tidewater Pipe Co. in October was 27,863.60 bbls. Deliveries were 27,863.60 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1930—		
October	478,442.12	320,688.73
1929—		
February	517,320.17	503,387.70
March	728,319.67	586,049.60
April	515,374.27	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,169.44
August	625,351.99	746,425.06
September	582,457.66	669,947.72
October	622,302.83	558,558.68
November	565,108.75	427,064.63
December	548,924.41	489,368.81
1930—		
January	543,387.95	498,293.93
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	530,074.22	509,304.60
May	605,147.37	504,069.84
June	572,662.57	468,658.81
July	604,529.54	388,454.47
August	594,642.12	375,742.43
September	457,001.11	371,691.63

Tide Water Pipe Co., Ltd., also delivered in October, 321,108.94 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS						GULF COAST PORTS						
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,968	.....	46,129	13,613	7,225	79,935	.....	.....	.....	.....	2,335	82,290
January	18,484	1,936	34,257	22,323	9,516	86,516	.....	.....	.....	.....	2,258	88,774
February	7,678	.....	24,714	14,321	5,000	51,714	.....	.....	.....	.....	2,607	54,321
March	10,548	3,065	28,871	8,774	22,484	73,742	.....	.....	.....	.....	805	74,548
April	7,767	.....	14,369	11,600	7,433	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	8,451	28,161	9,484	2,774	54,064	.....	.....	.....	.....	774	54,838
June	8,300	.....	33,933	20,767	2,333	65,333	.....	.....	.....	.....	2,400	67,733
July	17,355	7,774	43,419	23,839	6,452	98,839	.....	.....	.....	.....	4,645	103,484
August	7,418	8,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,710
September	6,300	6,400	25,600	13,400	9,567	61,267	.....	.....	.....	.....	2,433	63,700
October	2,516	3,065	27,258	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1929-30—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
November	23,633	18,900	125,200	41,100	28,200	237,033	2,233	12,533	6,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	23,776	233,678	5,548	16,484	6,613	1,774	30,419	264,097
January	21,161	16,678	134,581	35,677	43,806	248,903	4,322	6,453	.....	548	11,323	260,226
February	24,500	14,714	147,357	36,036	39,786	262,933	2,821	11,072	3,500	1,964	19,357	281,750
March	28,355	3,839	161,806	36,645	34,903	255,548	4,323	11,645	829	2,419	19,226	274,774
April	31,400	8,933	123,500	40,423	19,434	223,700	.....	7,400	2,433	4,167	14,000	237,700
May	24,129	9,322	174,194	39,291	28,226	275,161	8,194	11,548	2,935	1,323	24,000	299,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	2,167	1,333	25,300	283,663
July	42,097	9,548	154,968	37,935	36,032	280,580	5,678	9,161	2,097	2,387	19,323	299,903
August	39,032	4,484	145,613	33,355	25,097	247,581	8,419	9,323	8,548	3,000	29,290	276,871
September	38,867	8,533	150,933	34,500	25,567	258,400	6,433	12,234	.....	3,800	22,467	280,867
October	19,839	11,742	146,194	35,355	26,967	240,097	6,065	7,067	2,774	2,545	18,451	258,548

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
October:	Month	26,895,160	20,821,646	26,412,167	3,429,458	2,000,027	1,956,326	2,392,952	4,482,000	88,389,74[illegible]
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	141,358	2,851,282
November:	Month	21,317,540	19,193,760	24,896,034	3,430,560	1,911,060	1,853,565	2,350,110	4,029,000	78,981,629
	Daily average	710,585	639,792	829,868	114,352	63,702	61,785	78,337	134,300	2,632,720
December:	Month	21,705,554	20,092,876	25,609,822	3,549,066	1,917,071	1,878,352	2,378,754	4,168,100	81,299,596
	Daily average	700,179	648,156	815,394	114,486	61,841	60,592	76,734	134,455	2,622,569
January:	Month	21,983,242	20,802,984	25,284,352	3,273,197	1,817,685	1,780,969	2,161,090	4,216,000	81,309,519
	Daily average	709,137	671,064	815,624	105,587	58,635	57,451	69,390	136,000	2,622,88[illegible]
February:	Month	20,885,660	17,977,624	23,314,637	2,965,704	1,608,376	1,738,425	2,027,984	3,780,000	74,298,410
	Daily average	745,916	642,058	832,668	105,918	57,442	62,087	72,429	135,000	2,653,517
March:	Month	19,699,979	19,112,306	25,503,880	3,504,395	1,817,871	1,943,093	2,337,028	4,321,500	78,149,252
	Daily average	635,483	616,526	822,679	113,045	58,641	62,680	75,388	136,500	2,520,942
April:	Month	18,768,743	19,541,310	24,799,768	3,734,253	1,724,460	1,909,552	2,334,810	4,134,000	76,946,896
	Daily average	625,625	651,377	826,658	124,475	57,482	63,652	77,827	137,800	2,564,897
May:	Month	19,044,444	20,587,503	26,214,068	3,978,385	1,659,895	1,914,290	2,565,219	4,402,000	80,365,804
	Daily average	614,337	664,113	845,615	128,335	53,545	61,751	82,749	142,000	2,592,445
June:	Month	18,020,795	19,754,900	25,643,705	3,765,060	1,704,060	1,923,621	2,519,190	3,880,000	77,211,331
	Daily average	600,693	658,490	854,791	125,503	56,802	64,187	83,973	129,300	2,573,711
July:	Month	18,802,024	18,032,514	25,910,929	3,541,409	1,713,680	2,079,769	3,275,894	3,844,000	77,200,219
	Daily average	606,517	581,694	835,835	114,239	55,280	67,089	105,674	124,000	2,490,328
August:	Month	18,770,466	17,255,034	25,538,513	3,491,530	1,700,102	2,151,120	3,193,341	3,417,000	75,517,106
	Daily average	605,499	556,614	823,823	112,630	54,842	69,391	103,011	110,226	2,436,036
September:	Month	17,984,306	16,509,120	23,640,726	3,405,510	1,583,280	2,008,060	3,239,010	3,396,000	71,766,012
	Daily average	599,477	550,304	788,023	113,517	52,776	66,935	107,967	113,200	2,392,194
Total 12 months		243,877,913	229,681,577	302,768,101	42,668,537	21,157,627	23,137,142	30,765,382	47,979,600	941,435,539

THE "LOCK-ON, SLIP-OFF" DISC HOLDER

The Re-New-Disc valve, with its "lock-on, slip-off" disc holder, as made by Walworth, was developed nine years ago. The disc holder may be "locked-on," when the valve is taken apart. This prevents the holder from dropping, by accident, into machinery or open vats, and facilitates renewing the disc.

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Walworth valves of merit provide safe, economical and precise control of steam, water, oil, air and gas lines under all conditions of service. The Walworth Re-New-Disc for 150 lbs. steam service is one of the leaders of our line of quality bronze valves.

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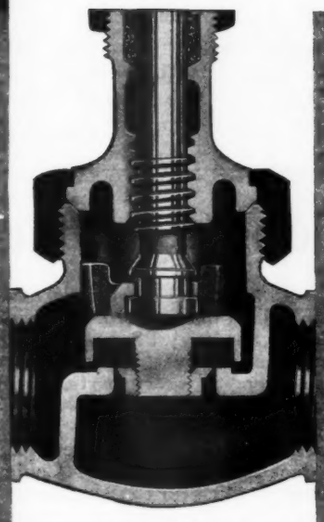
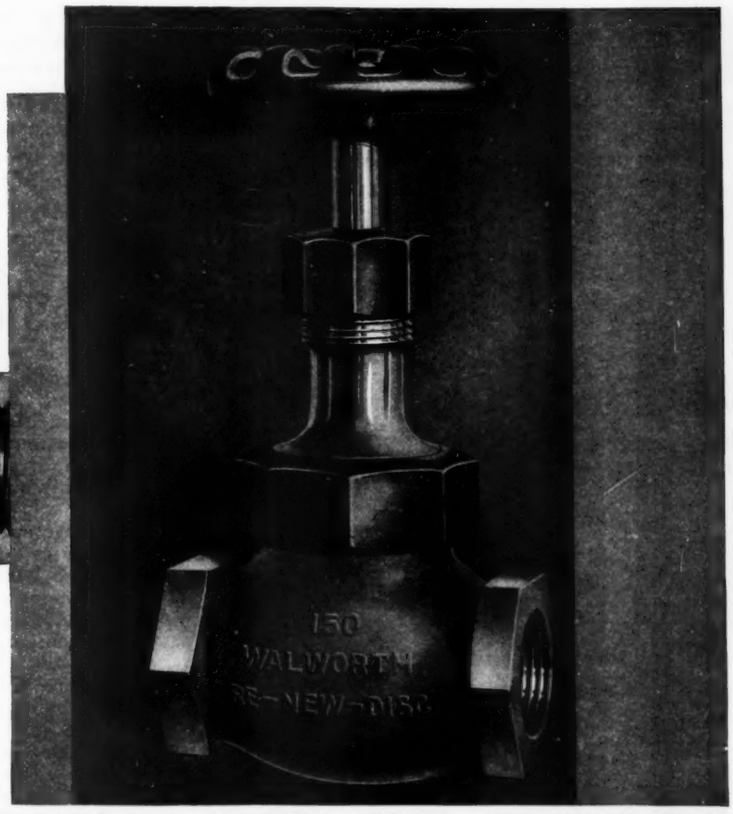


Sectioned View
Showing Construction of
Disc Holder Re-New-Disc Valve
Fig. 95



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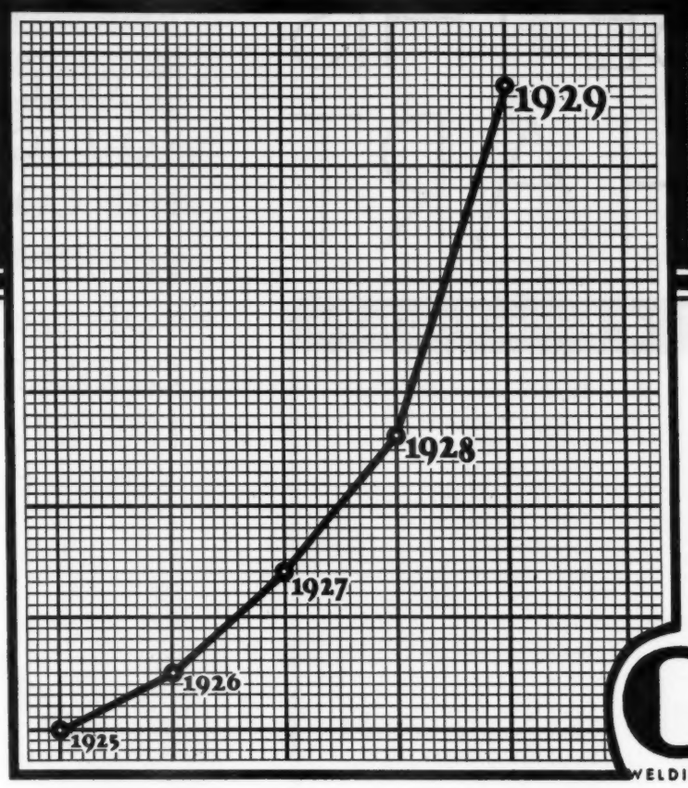

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WELDING AND CUTTING APPARATUS AND SUPPLIES

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USE THIS CHART

IT WILL HELP YOU TO SELECT THE CORRECT BEARING METAL FOR EACH OPERATION OF THE OIL INDUSTRY

	Equipment	Bearing Metal to Use
DRILLING a. Standard or Cable Tools	Steam Engines	Eagle Dreadnaught
	Sand Reels—High Speed	Eagle Dreadnaught
	Sand Reels—Old Style	Eagle Outlasta
	Jack Posts	Eagle Outlasta
	Calf Wheels	Eagle Durable No. 4
	Bull Wheels—New Style	Eagle Outlasta
	Bull Wheels—Old Style	Eagle Durable
	Crown Blocks	Eagle Outlasta
	Electric Motors	Eagle Dreadnaught
	Countershafts	Eagle Outlasta
	Clutches	Eagle Dreadnaught
DRILLING b. Rotary Tools	Steam Engines (Single or Twins)	Eagle Dreadnaught
	Electric Motors	Eagle Dreadnaught
	Pumps Rotary	Eagle Dreadnaught
	Draw Works	Eagle Outlasta
	Rotary Rigs	Eagle Outlasta
	Crown Blocks	Eagle Outlasta
	Traveling Blocks	Eagle Outlasta
	Clutches	Eagle Dreadnaught
	Rotary Drive Shafts	Eagle Outlasta
	Gas and Oil Engines, smaller than 35 H. P.	Eagle Outlasta
PRODUCTION	Gas Engines—35 H.P. and larger	Eagle Dreadnaught
	Oil Engines	Eagle Dreadnaught
	Electric Motors	Eagle Dreadnaught
	Clutches	Eagle Dreadnaught
	Countershafts	Eagle Outlasta
	Jack Posts	Eagle Outlasta
	Crown Blocks	Eagle Outlasta
	Traveling Blocks	Eagle Outlasta
	Bull Wheels	Eagle Outlasta
	Band Wheel Powers	Eagle Durable No. 4
	Compressors	Eagle Dreadnaught
	Electrical Pumping Units	Eagle Dreadnaught
PIPE LINES	Diesel Engines	Eagle Dreadnaught
	Pumps	Eagle Dreadnaught
REFINERIES	Diesel Engines	Eagle Dreadnaught
	Pumps	Eagle Dreadnaught

The accompanying chart has been developed by our research engineers as a further service to the men responsible for the smooth running of every branch of the oil industry.

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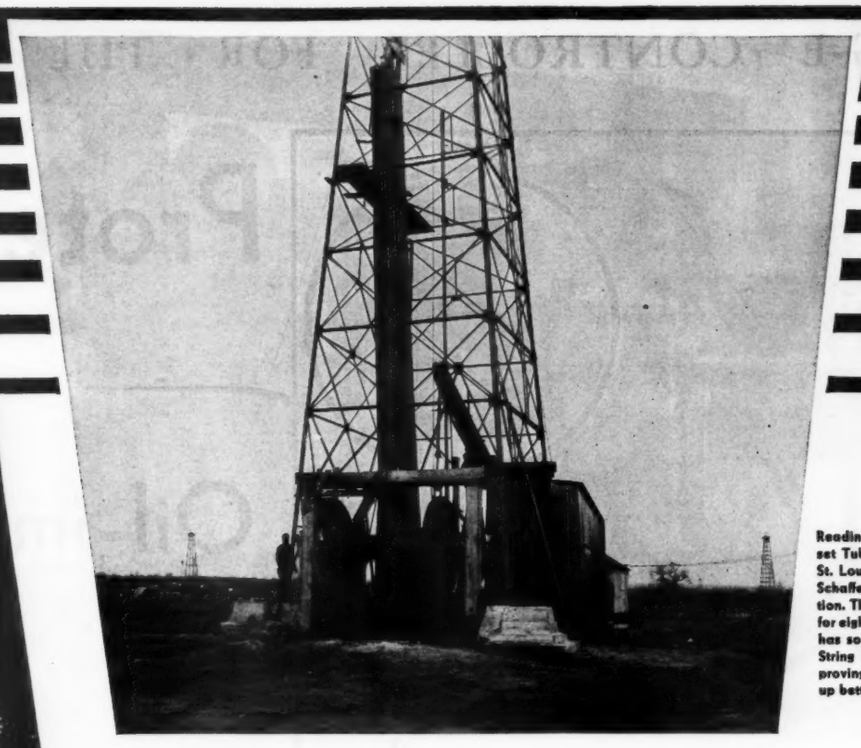
3

Eagle Durable No. 4 Bearing Metal—
for the less severe bearing requirements.

3 METALS SCIENTIFICALLY DESIGNED TO MEET 95% OF ALL BEARING METAL REQUIREMENTS



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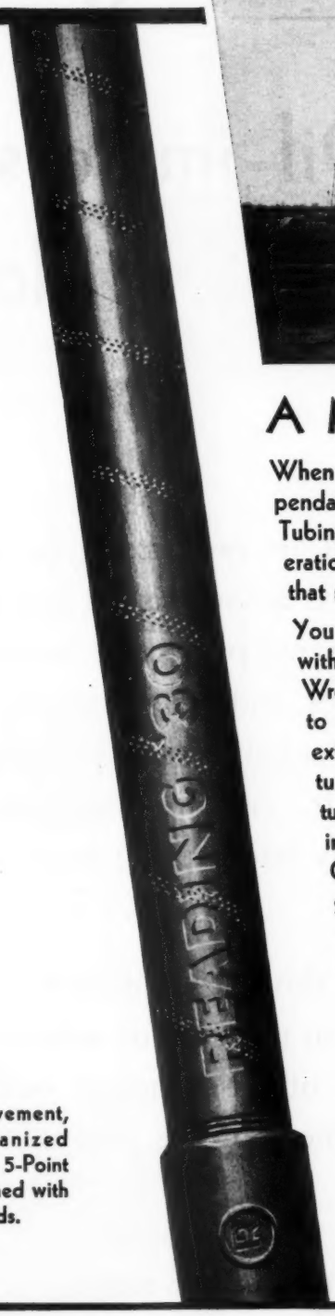

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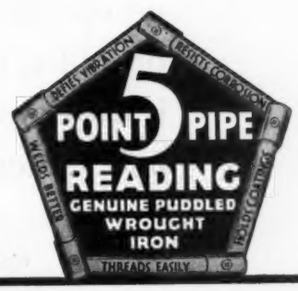

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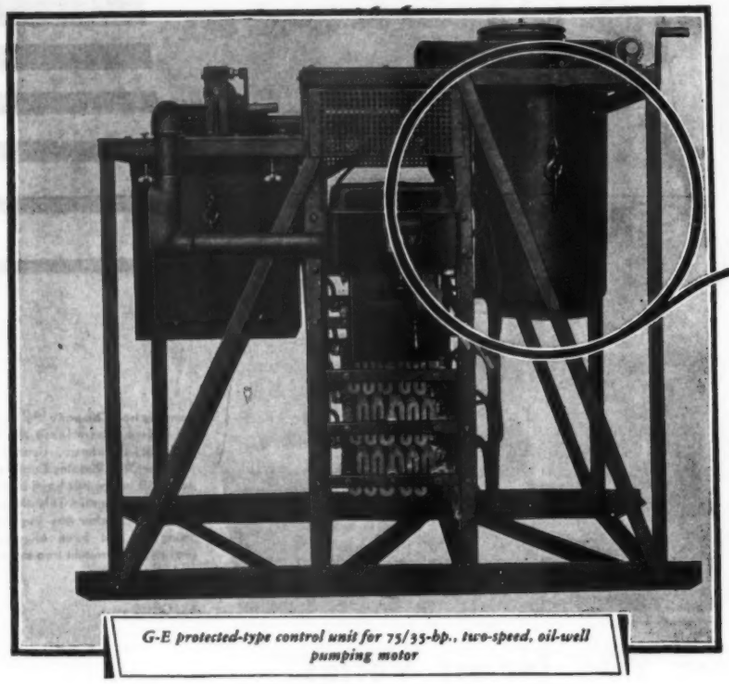

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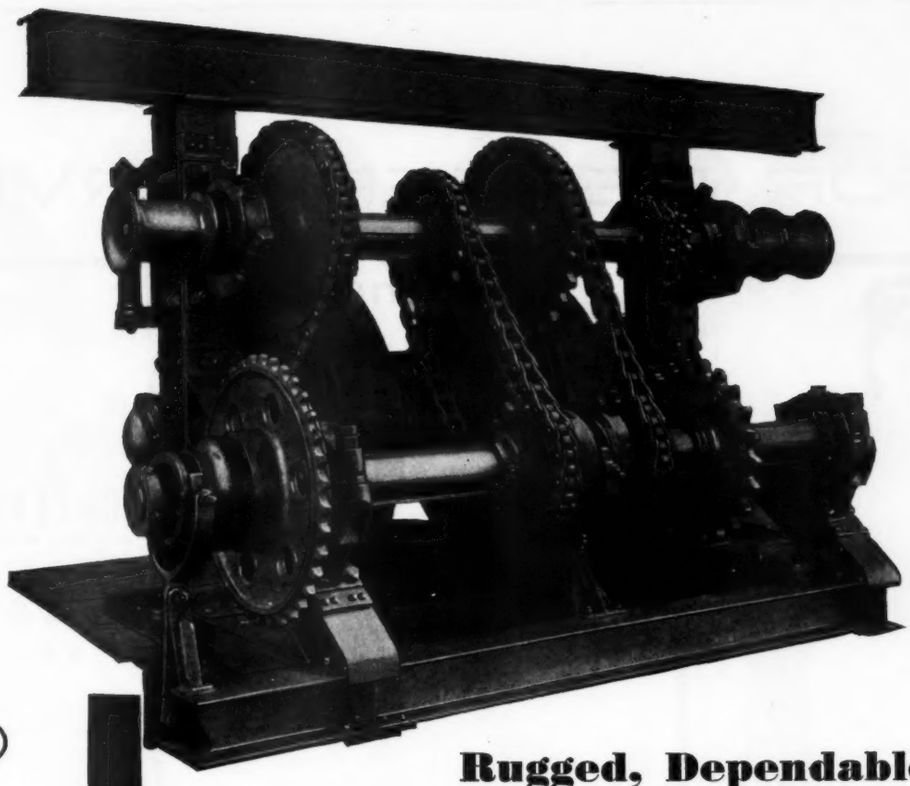

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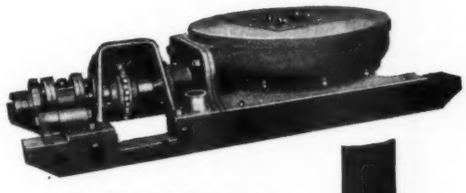
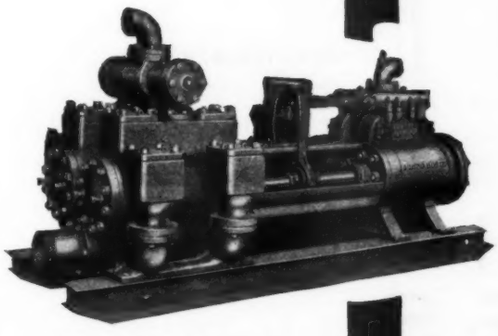


"Gumbo Buster" 26 in. oil-bath rotary using Nickel Chrome Steel parts.



"Gumbo Buster" slush pump with fluid end of cast electric furnace Nickel Chrome Steel.

WHEREVER oil drilling operations are carried on, "Gumbo Buster" equipment is known for its ruggedness and dependability. These machines, manufactured by the American Well and Prospecting Company, and distributed by the Republic Supply Company, are the product of 40 years' experience in designing equipment to meet the increasingly strenuous needs of the petroleum industry.

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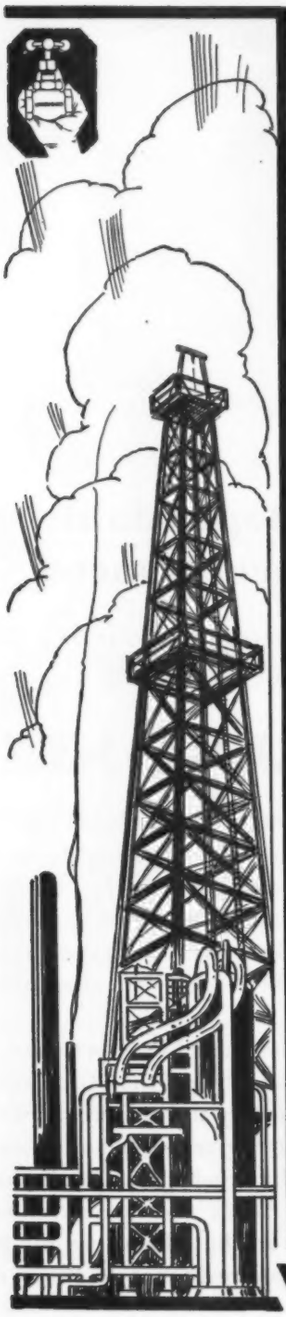
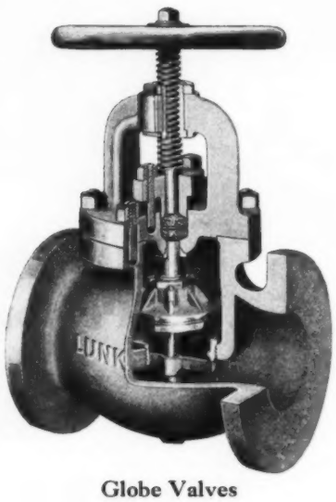
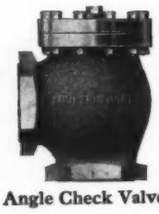




Globe Valves

Swing Check Valves

Horizontal Check Valves



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Globe, Angle Cross & Check VALVES

have proved in a multitude of installations to be ideal for high steam pressures.

Precision machining throughout, insuring perfect seating of disc; annular seat ring extension in heavy and extra heavy patterns, allowing for expansion and contraction; bronze to bronze contacts which eliminate corrosion; and regrindable and renewable seating surfaces are features which provide uninterrupted economical service.

Globe, angle and cross patterns are made for 125, 175 and 250 lb. W. S. P.—the check for 125 and 250 lb. W. S. P., in all commercial sizes. Also procurable in All-Iron patterns for handling solutions which attack bronze but not iron.

Write for descriptive literature and for the name of the Lunkenheimer distributor nearest you.

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
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LUNKENHEIMER VALVES

13039-40-91

ARMCO INGOT IRON

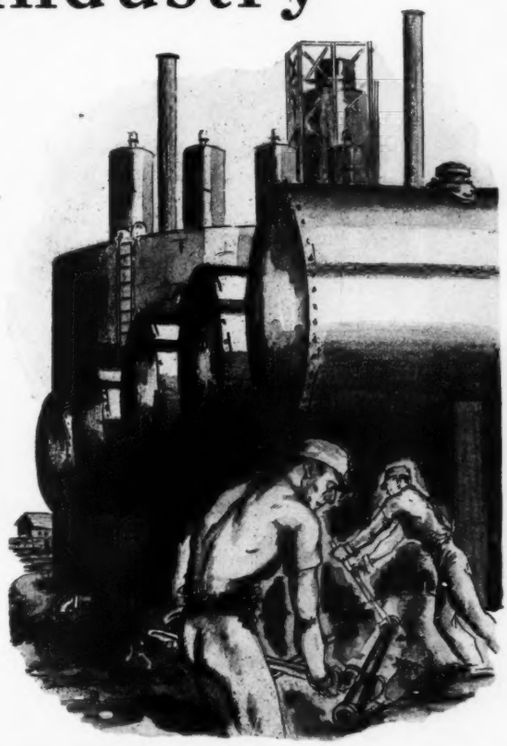
proves its *saving-values* to the oil industry

WHEREVER derricks loom and pipe lines are laid . . . wherever crude is refined and made useful to man—there Armco INGOT IRON is doing valiant duty in the cause of oil industry economy.

From long, winding pipe lines that carry gas and oil, to pulsating agitators and great storage tanks, this durable iron is helping to conserve time and money.

Fewer interruptions to service, fewer repairs and replacements, smaller appropriations for maintenance —these go with your adoption of Armco INGOT IRON. And you have the satisfaction of knowing that your investment is based on twenty-two years of *dependable performance*—the longest record of actual service of any low-cost, rust-resisting plates and sheets.

When you require plates and sheets for equipment and construction of any kind, you will want to consider Armo INGOT IRON. An enlightening discussion with an Armco Engineer can easily be arranged. Just write to the office nearest you.



TUNE IN—The Famous Armco Concert Band broadcasts every Thursday night—WLW, 700 K. Cincinnati — Nine to nine-thirty E. S. T.

THE AMERICAN ROLLING MILL CO.
Executive Offices, Middletown, Ohio
Export: The ARMCO International Corporation

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ARMCO

Back of this familiar symbol is nearly thirty years' experience in the manufacture of special analysis iron and steel sheets and plates. When you want a rust-resisting, low-cost metal be sure to see this triangle and the words, "Armco INGOT IRON." It is your assurance of dependable, economical service.

"BE SURE IT'S MADE OF ARMCO INGOT IRON"

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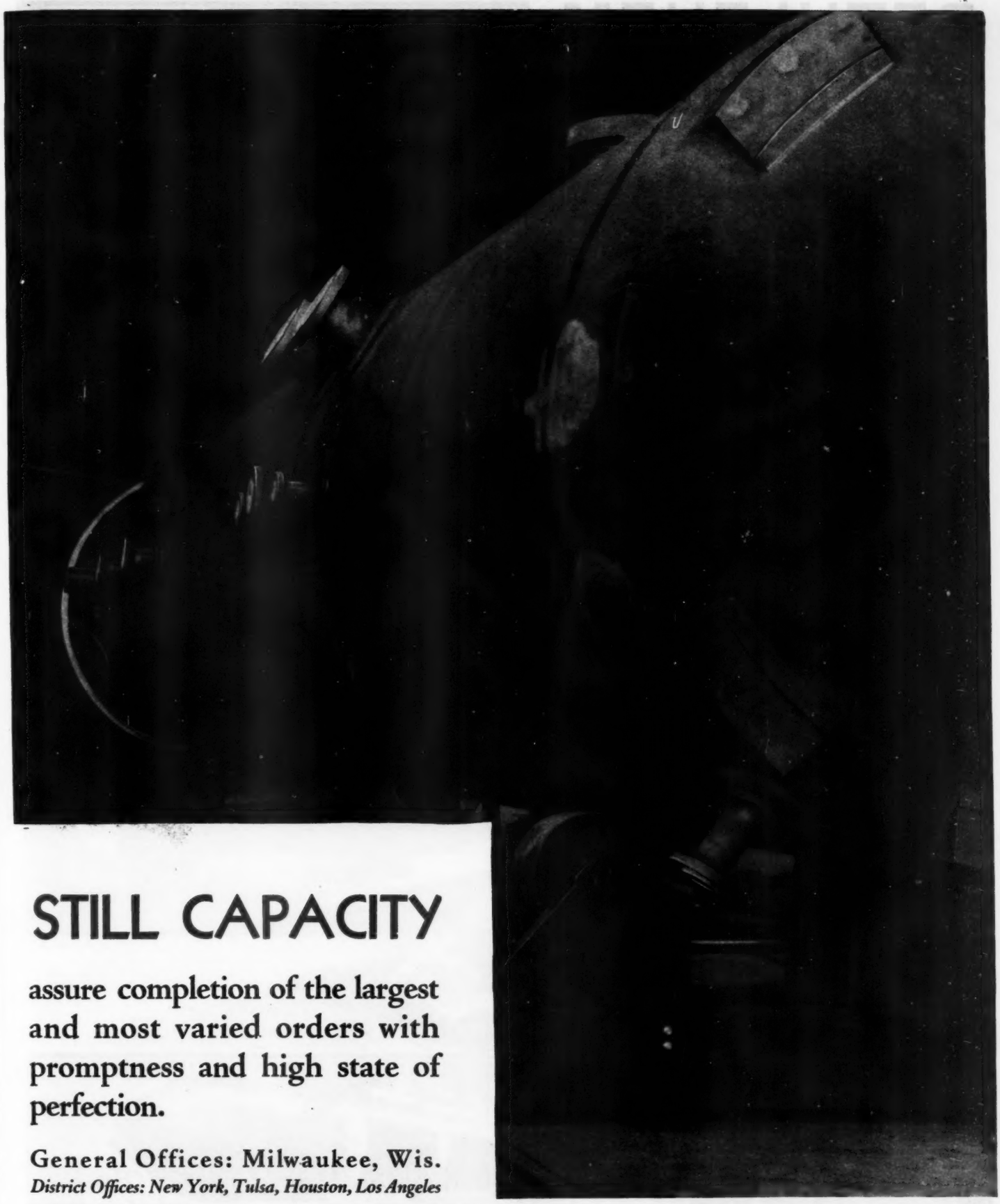
In the Smith Still Plant, greatly expanded SMITH-Welding facilities, and three immense heat-treating furnaces

A. O. SMITH CORPORATION
Oil & Gas Field Products Division

SMITH WELDED



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assure completion of the largest and most varied orders with promptness and high state of perfection.

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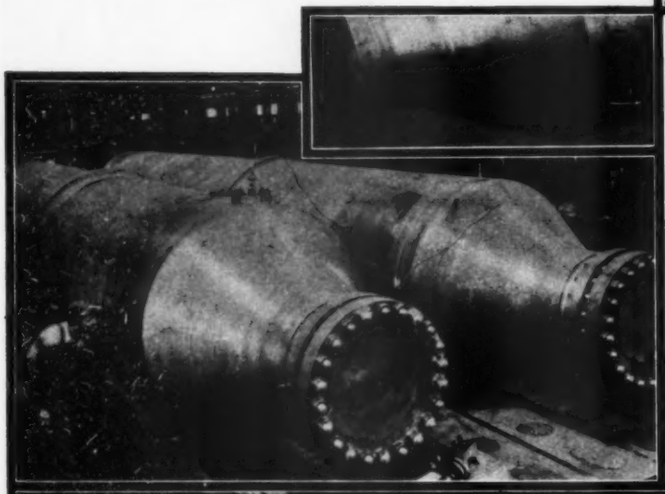
BETHLEHEM produces



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BETHLEHEM STEEL COMPANY
General Offices: BETHLEHEM, PA.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Buffalo, Pittsburgh, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.

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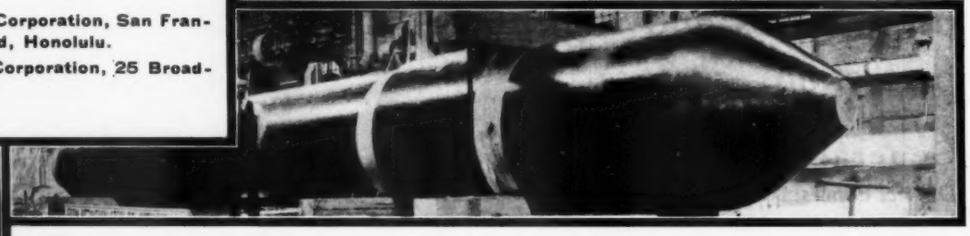


BETHLEHEM

Making New Records With Dry Steam

BRODERICK Superheated Boilers operated by Kahl & Smiley at Oklahoma City, Okla., give results with 250 lbs. of steam pressure . . . as formerly secured with 350 lbs. of saturated steam.

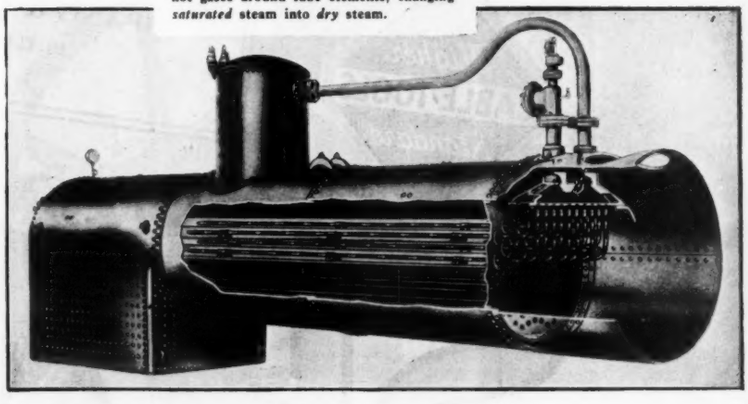
New speed is assured for pumps and engine, especially the new roller bearing type with piston valves.

Another saving is realized in size of steam lines as well as in amount of water used and fuel consumed.

Ask the National Supply Man to give you details of recent installations that bear out careful tests made with this first superheated boiler in the oil well fields. Write for Bulletin of tests.

Broderick Superheated Boilers operated by Kahl & Smiley at Oklahoma City, Okla.

Below—Cut-away view to show flow of hot gases around tube elements, changing *saturated* steam into *dry* steam.



BRODERICK BOILERS
WITH
SUPERHEATERS

Made by
THE BRODERICK COMPANY
Boiler Manufacturers
MUNCIE, Indiana—U.S.A.

For Extra Long
ENDURANCE
Boxes and Pins
HIGH grade steel, unless properly forged and scientifically heat-treated, is not sufficient. SPANG realizes this and therefore works to extra high standards in every step of manufacture, as well as in the selection of materials. An extra factor of safety plus extra long wear is what you get when you standardize on Spang Boxes and Pins. Have your nearest shop furnish them and weld them on. They're "right" for welding.
SPANG & COMPANY
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ONE INVESTMENT

You will never have cause to regret **for** *this fine pumping engine may be converted to oil fuel in case of gas shortage*

Built as a fine gas pumping engine—with simplicity, strength and longevity inbuilt, this engine may be converted to oil fuel in 90 minutes. Play safe on the fuel question—investigate this dependable power plant.

Franklin Valveless Engine Company
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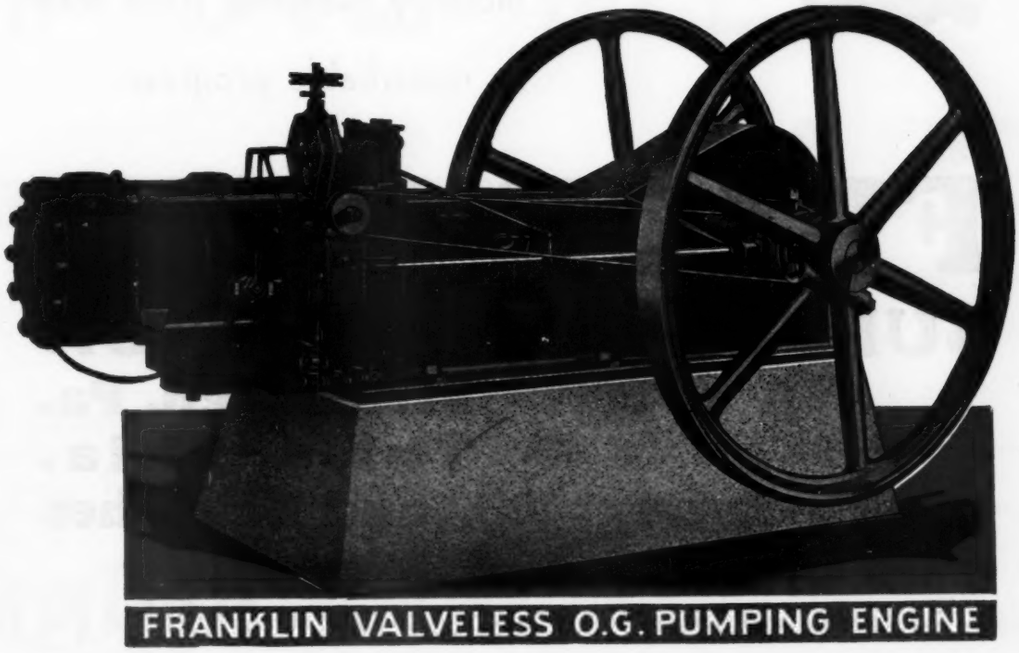

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POWELL VALVES

. . . are typical of what we mean when we say that Frick-Reid handles Quality Products Only. For eighty-four years Powell Valves have been the accepted standard. For seventy-one years they have served the Petroleum Industry, keeping pace with its remarkable progress.

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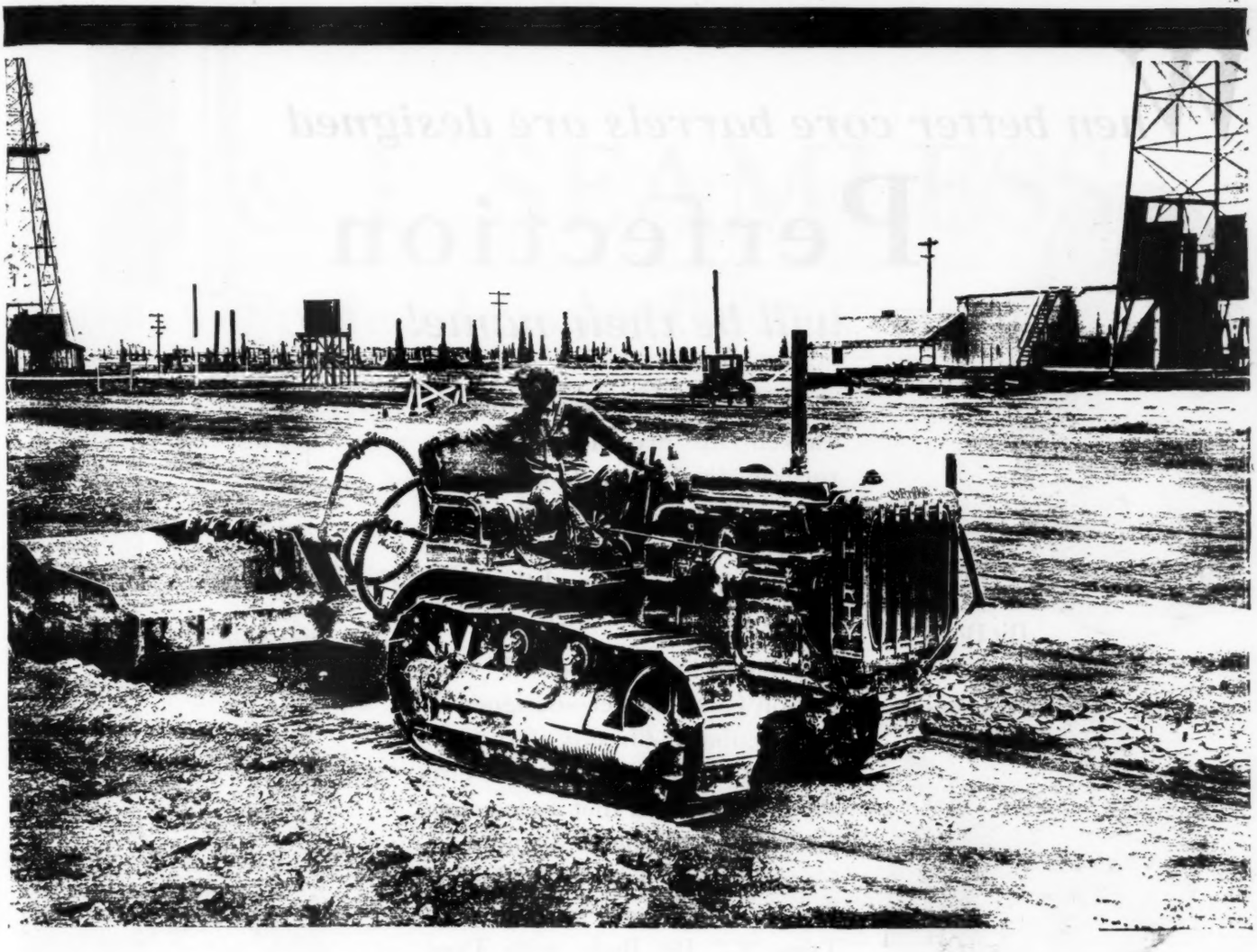


when OIL MEN move EARTH

"CATERPILLAR" Tractors supply the power for all manner of earth-moving jobs, building tanks, throwing up dykes, leveling, road-building, excavating for foundations—scores of jobs. With traction to laugh at bad weather and soft going—with power to tackle big loads—with stamina to hold at work for long days through the long years! Then there are the other jobs at which "Caterpillars" are so adept—hauling pipe or pulling rods and tubes.

Prices—f. o. b. Peoria, Illinois

TEN	$1100	TWENTY	$1900
FIFTEEN	$1450	THIRTY	$2375
SIXTY	$4175		

Caterpillar Tractor Co.

PEORIA, ILLINOIS, U. S. A.

Track-type Tractors Combines Road Machinery

(There's a "Caterpillar" Dealer Near You)

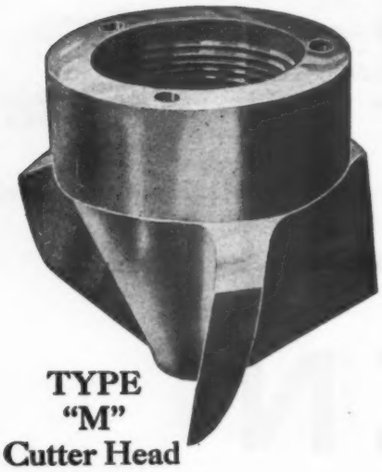
CATERPILLAR
REG. U. S. PAT. OFF.
TRACTOR

When better core barrels are designed

Perfection

will be their name!

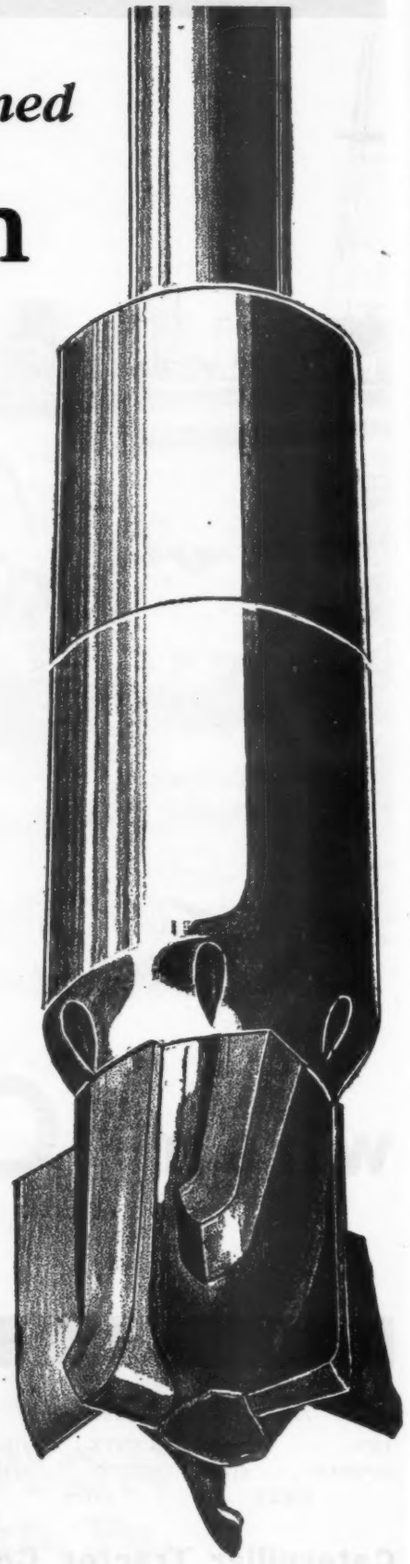
TYPE "M" Bit Body



TYPE "M" Cutter Head

Constant advances in design, backed by precision manufacture in finely-tooled, splendidly manned shops—that is why 9 out of every 10 contractors give the Perfection Core Barrel the same unqualified endorsement.

The latest is the Type "M" Perfection Core Barrel—designed to put circulation directly on the cutting edge. The result is an efficiently cooled bit that makes hole fast through hard formations. Convert your Type "C" Perfection Core Barrels by replacing Type "C" Bit Body with Type "M". We will furnish the latter free to owners of Type "C" barrel.



The Brewster COMPANY~INC.
SUCCESSORS TO OIL CITY IRON WORKS INC.
Shreveport, Louisiana

Ask today for Catalog and Prices

COMPLETE STOCK carried at these warehouses: Iverson Specialty Co., Oklahoma City, phone 2-2833; Houston Store, 2000 Harrington St., Houston, Texas, phone Capitol 3021. *Distributors:* Wilson Supply Co., Houston, Beaumont and Luling, Texas; Continental Supply Co., all stores; Murray-Brooks Hardware Co., Lake Charles, Louisiana; T. T. Word Supply Co., Houston, Texas, and Lake Charles, Louisiana; The Ellis Iron Works, Inc., El Dorado, Arkansas.

YOUR GUARANTEE of SATISFACTION is the BREWSTER NAME

Ask about these other Brewster Products

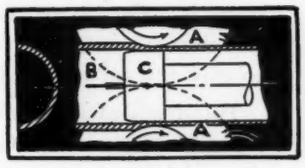
A.P.I. Shouldered Tool Joints; Perfection Core Barrels; Chrome Nickel Drill Collars; Special Fish Tail and Gumbo Bits; Core Barrel Cutter Heads for both hard and soft formations—hard formation cutters heads are faced with a substance of diamond-like hardness.

J & L SEAMLESS

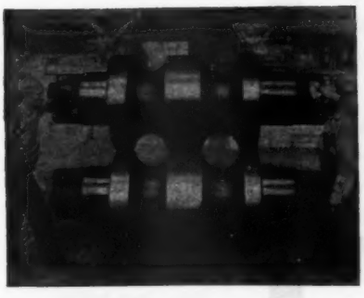
Produced under Finest Control in the Heaviest Plug Mills in Existence

The picture shows one of the powerful J & L plug mills, the largest and heaviest in existence.

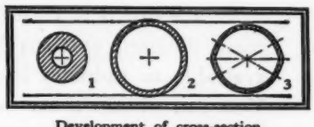
FACILITIES of J & L for making Seamless Casing, Tubing and Drill Pipe of highest quality are unsurpassed. For instance, J & L employs the heaviest plug mills in existence for producing all sizes of seamless from 2⅜" O.D. to 13⅜" O.D. By using this extra heavy equipment J & L has reduced detrimental vibration to a minimum, and has obtained as nearly perfect control as possible over an operation highly important to making seamless of superior quality. In the plug mill a denser steel structure and the correct weight per foot are obtained as the tube is rolled to approximately the exact wall thickness. The more thoroughly the plug mill does its work the greater will be the endurance and dependability of the finished pipe.



Sketch of plug mill operation in seamless manufacture. "A" are the rolls, "B" is the tube, and "C" is the plug over which the tube is rolled.



The picture at the left indicates the giant size of the rolls employed in the J & L Seamless Pipe plug mills.



Development of cross-section of J & L Seamless Pipe: 1. After first piercing; 2. After second piercing; 3. After plug mill rolling.

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

J&L STEEL

Manufacturers of Seamless and Welded Casing, Tubing, Drill Pipe and Line Pipe, and Welded Steam, Gas and Water Pipe in both Black and Galvanized.

Also makers of Bars, Shapes and Plates, Reinforcing Bars, Cold Finished Steel, Junior Beams, Steel Piling, Fabricated Structural Work, Steel Barges, Wire Products and Tin Mill Products.

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

What Goulds Service Means to You

WHAT Goulds service really means is this: That whatever your pumping requirements may be, there is a Goulds pump to fulfill them. That wherever you may be, there is a complete stock of Goulds pumps near you, and there is a Goulds representative close at hand, always ready to give you expert assistance.

Hundreds of industrial plants are benefiting by the economical operation of Goulds pumps, and by their absolute dependability, both in every-day service and in emergencies. The efficiency and dependability of these pumps are the direct result of 82 years of pump making.

In a word, the complete facilities of the world's largest plant devoted exclusively to the manufacture of pumps are available to industry in the solution of pumping problems. You can obtain these services simply by calling the Goulds representative in your city, or writing the nearest branch office or the main office.

GOULDS PUMPS, Inc., Seneca Falls, N.Y.

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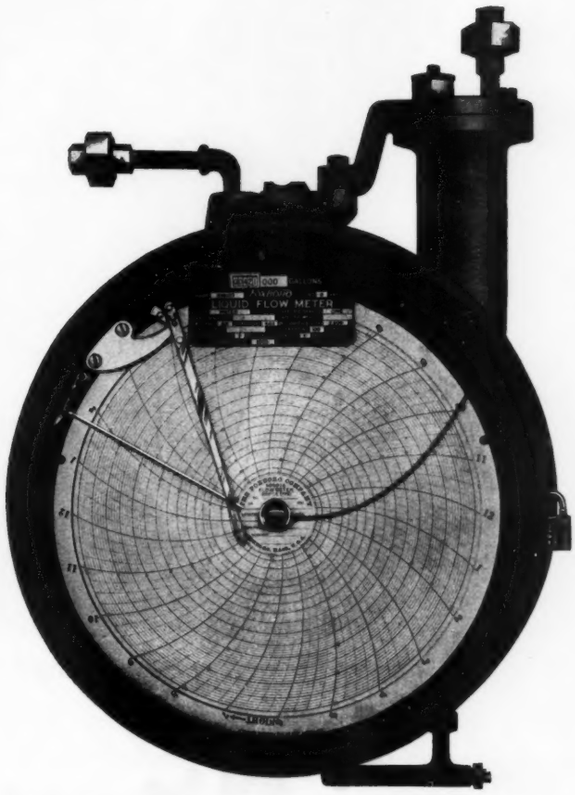
GOULDS PUMPS

«««NOTHING STOPS THEM»»»



FOXBORO FLUID METERS DEFY ROUGH SERVICE

Nothing stops the All-American. He plays with deadly accuracy throughout the jarring schedule. After all—that is to be expected from the public's favorites.

The Foxboro Fluid Meter is the favorite among Oil and Gas men because Nothing stops it. Dirt—Slime—Hard Service have no effect on its accuracy. Where other meters fail—the Foxboro Fluid Meter succeeds.

Send TODAY for Bulletin 162J. It tells the whole story.

THE FOXBORO FLUID METER tells you accurately the total flow and the rate of flow in your pipe lines without computation. Its chart shows the rate of flow. The total flow is read directly from its integrator which reads like a speedometer and requires no factors.

THE FOXBORO COMPANY

Neponset Avenue, Foxboro, Mass., U. S. A.

28 North Guthrie Ave., Tulsa, Okla.
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Instruments for Controlling, Recording and Indicating Temperature, Flow, Humidity and Pressure

WHY WORRY ?

You can forget your pipe worries and speed up your jobs—if your pipe and casing come to you equipped with Colona Protectors.

These big, husky, heavy gauge protectors cover the ends as well as the threads—bumps and bangs—grease and sand—cannot injure the pipe—it reaches you in the same identical condition it left the mill.

All you have to do—is to specify "Colona Protectors." Why not do it?

Pittsburgh Screw & Bolt Corp.
Colona Division « » Pittsburgh, Penna.

Demand COLONA

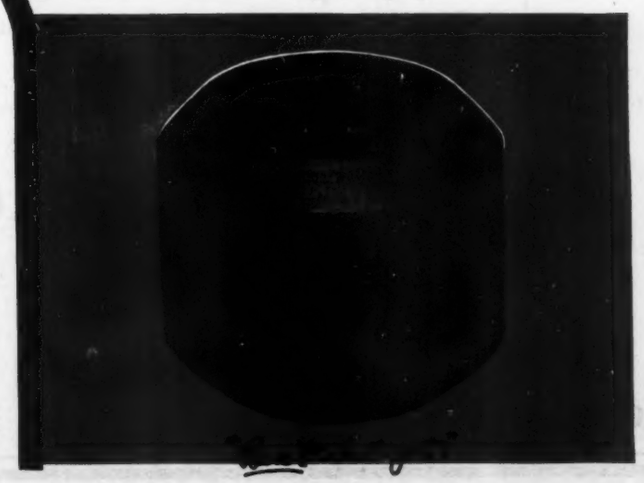
PIPE THREAD PROTECTORS

If you are drilling a crooked well

The straightest oil well ever drilled is not exactly vertical. But the straighter the hole, the better the well. Angled and deflecting fault formations plus depth are factors contributing to crooked hole. You need every assistance you can get in drilling your well as straight as possible. That's where Bettis Drill Stabilizers can help you out. Even if you have your well down a few thousand feet with a kink here and there in the vertical you can go a long ways toward straightening out the trouble by equipping the string in open formation with Bettis Drill Stabilizers and by using Bettis Protectors on the pipe within the casing. The Stabilizers give the bit GUIDANCE, keeping it right in the center. The power that you will save and the increased speed in drilling will go a long ways toward paying the installation costs. Of course the logical time to equip your string with Bettis protection is in the beginning—but it is never too late to place these efficient rubber cushions to work. With stocks carried in easy access of almost every rotary field you can obtain delivery in a jiffy.

Enter the Bettis Letter Contest
$400 Cash Prizes

Write a plain, simple statement or letter telling of your experience or anyone else's experience with Bettis Protectors. Not over 300 words. Mail it promptly and you may win one of the 20 cash prizes we are offering. Contest closes December 31, 1930.



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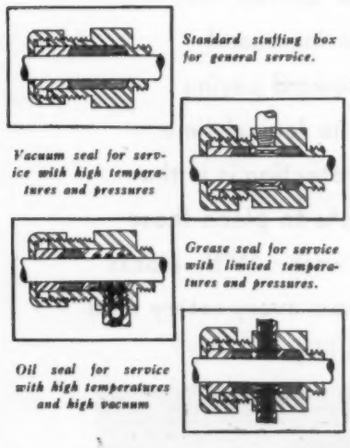
Carried in stock at Los Angeles, Ventura, Kettleman Hills, Bakersfield, Coalinga, and Long Beach, California. Tulsa and Oklahoma City, Okla. Houston, Texas. Hobbs, N. M. Calgary, Alberta, Canada. New York City.

Now! NEILAN announces a new ROTARY STEM MOTOR VALVE

SPECIAL PACKING FOR EVERY SERVICE

—a positive seal for each particular service.


Standard stuffing box for general service.
Vacuum seal for service with high temperatures and pressures
Grease seal for service with limited temperatures and pressures.
Oil seal for service with high temperatures and high vacuum

FROM the Neilan Laboratory comes a perfected motor valve that stays tightly packed at high temperatures and pressures! This new motor valve has been especially developed for high temperature cracking and refining processes. It has a unique rotary-stem construction which is easy to keep tightly packed even in severe service, and which safeguards against leakage.

For your protection, all materials in this Neilan motor valve are chosen to eliminate corrosion and friction at high temperatures and pressures. Valve bodies are made of high strength, chrome-alloy cast steel—while the ball bearings, valve stems, and operating linkages are made of Nirosta KA2 stainless steel.

Send for bulletin No. 34 describing the many advanced features of this new Neilan Rotary-Stem Motor Valve

NEILAN CO., Ltd.

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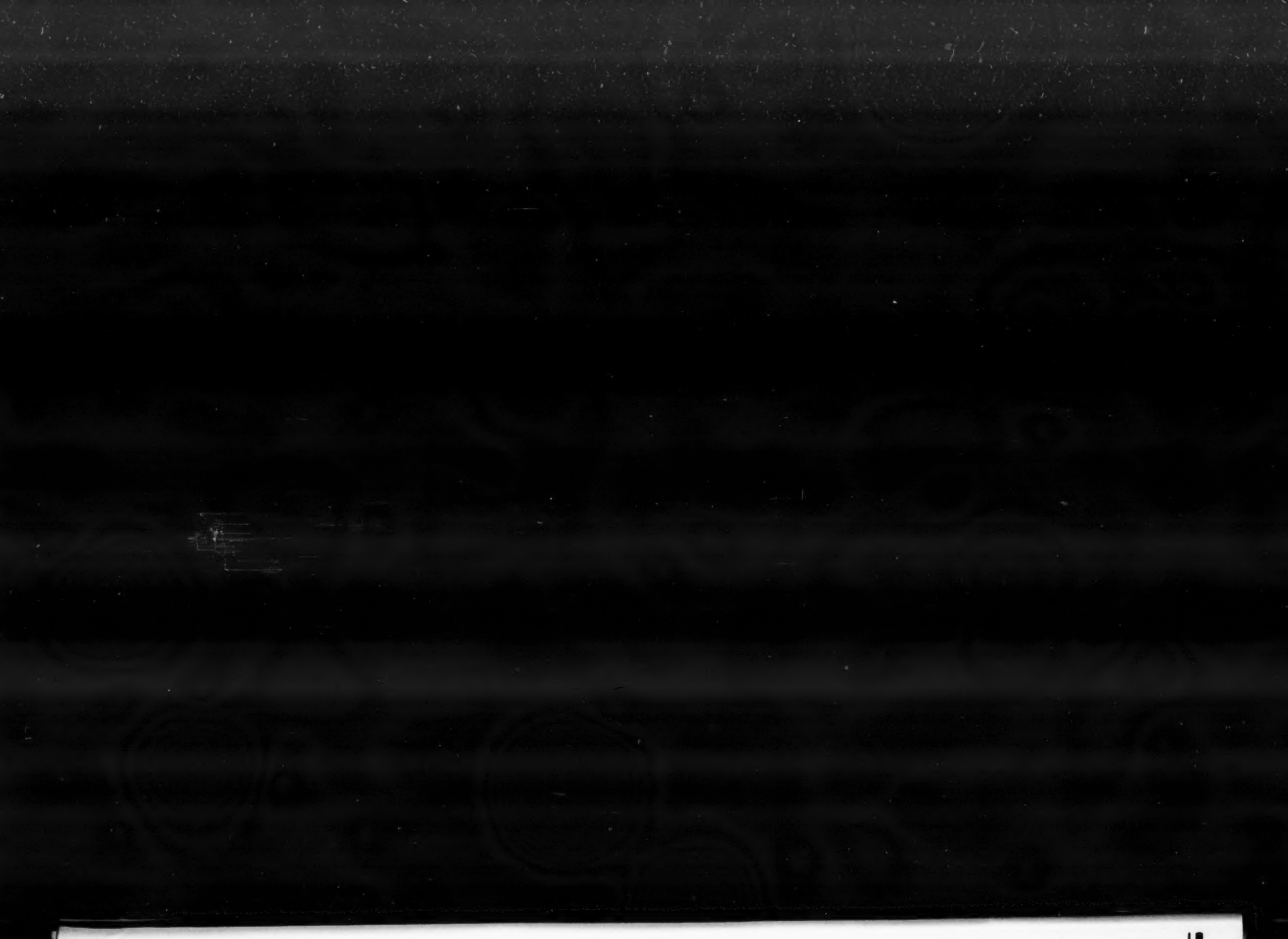
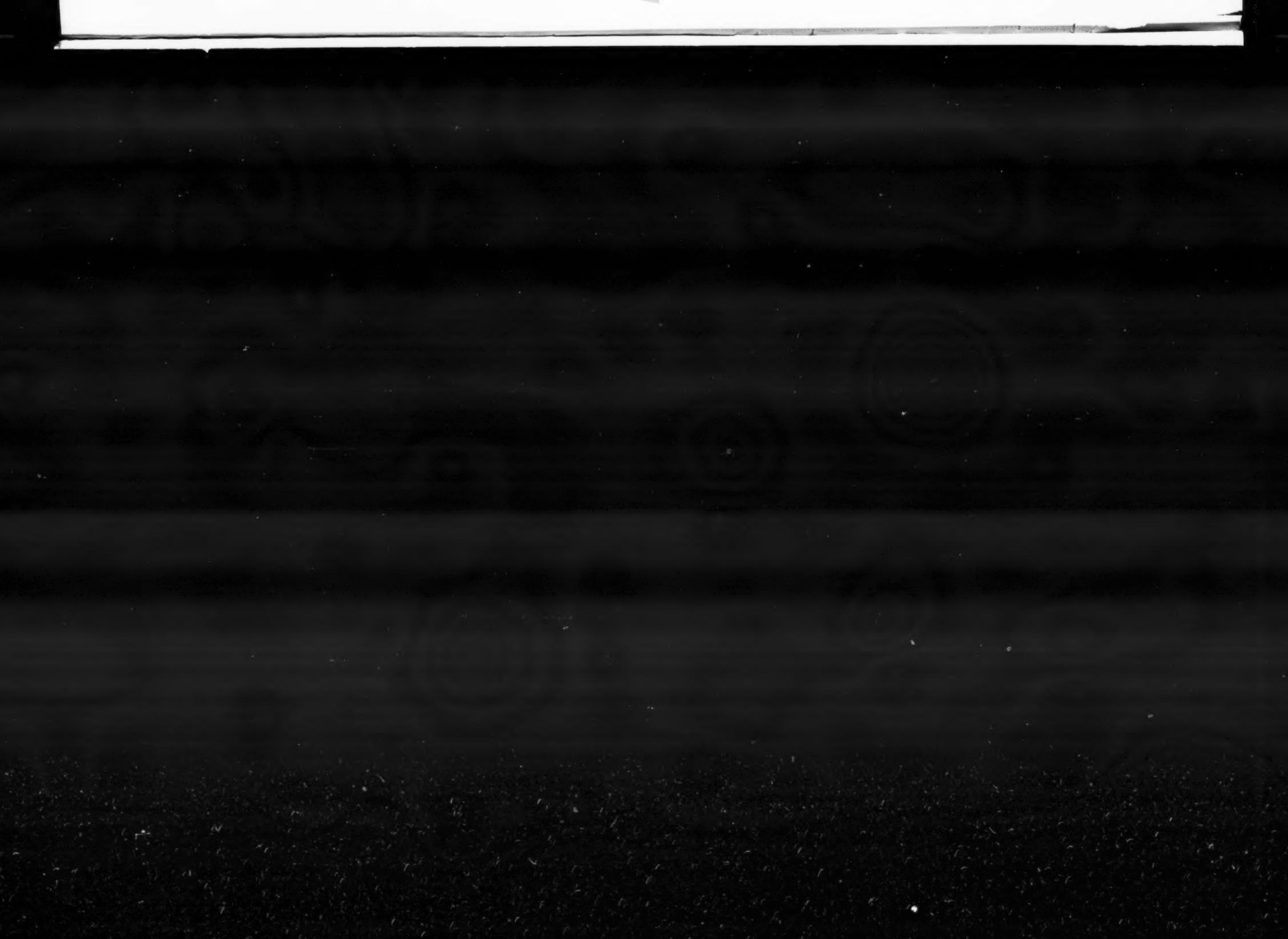
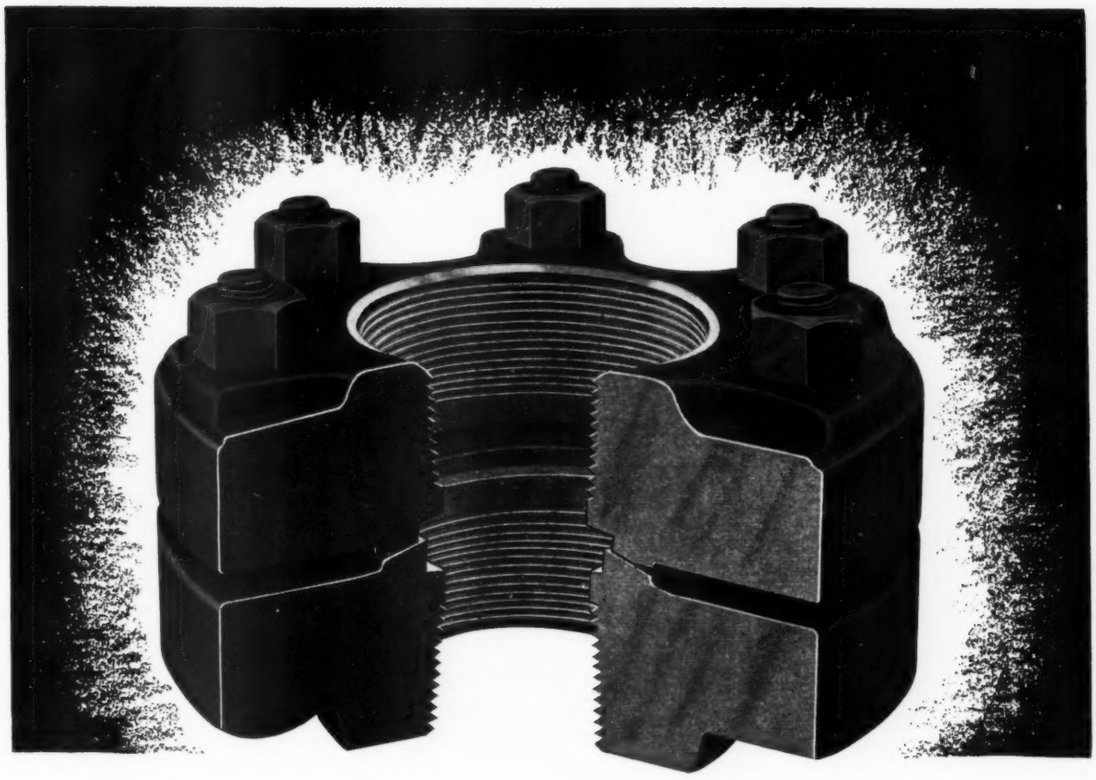
"YOU CAN BE SURE OF NEILAN PRODUCTS"







A NEW Gaso *Certified Malleable Ground Joint* Flange Union

¶ Extremely high pressure with light weight ¶ 2,000-Lb. hydraulic test ¶ Certified malleable iron ¶ Metal-to-metal face with a ground ball joint which permits tight joint without pipes being in perfect alignment ¶ Pipe sizes 2″ to 8″

GASO PUMP & BURNER MFG. COMPANY « Tulsa, Okla.
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GASO PUMPS

for every oil industry need

This Great California Well

Successfully controlled by

HUGHES VALVES

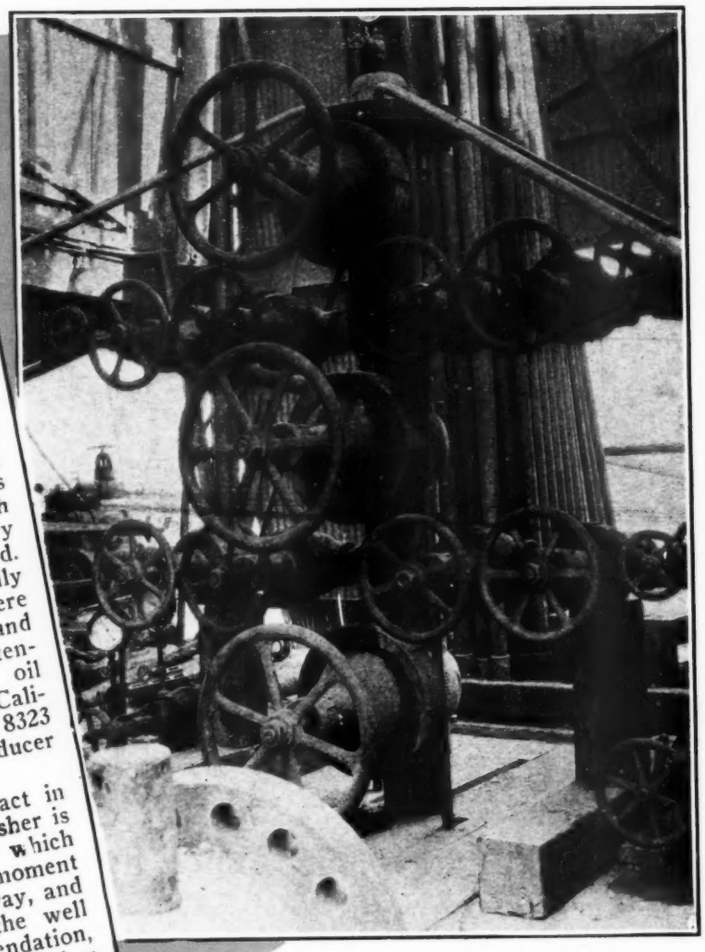
THURSDAY, OCTOBER 30, 1930

Huffman 1 Holds To 13,000 Daily

KETTLEMAN HILLS, Oct. 29. —Superior Oil Co.'s Huffman No. 1, the northwest outpost of the North Dome, Kettleman Hills, continues to increase its production, and early this week was reported making close to 13,000 bbls. of oil and approximately 80,000,000 c.f. of wet gas daily. This is an increase of more than 3000 bbls. of oil since the initial gauge was made some weeks ago. It is interesting to note that a corresponding decrease has been made in the gas output, which indicates that a more satisfactory gas-oil ratio has been established. That the Huffman well could easily increase its yield if the beans were opened is readily admitted, and without doubt is the largest potential producer of high gravity oil ever brought on production in California. Depth of the well is 8323 ft., making it the deepest producer in the state.

Not the least interesting fact in connection with this huge gusher is the complete control under which it has been held from the moment it first spouted a film of spray, and the mechanical work on the well deserves the highest commendation, for no time was lost in the drilling because of fishing jobs or other hindrances.

According to Superior plans, the newly completed absorption plant was to be in operation Wednesday (today), and this will take care of the wet gas. This unit has a daily capacity of 150,000 gallons of natural casinghead gasoline which will be taken by The Texas Co., while Union Oil Co. has the contract for the Huffman oil.



The above photograph shows the Christmas Tree hook-up on this outstanding California well. Valves shown are: three 8", 6000-lb. test Hughes manifold valves and eight 4" 6000-lb. test Hughes manifold valves. The well has been under complete control from the moment it first spouted a film of spray.

HUGHES TOOL COMPANY

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HOUSTON, TEXAS

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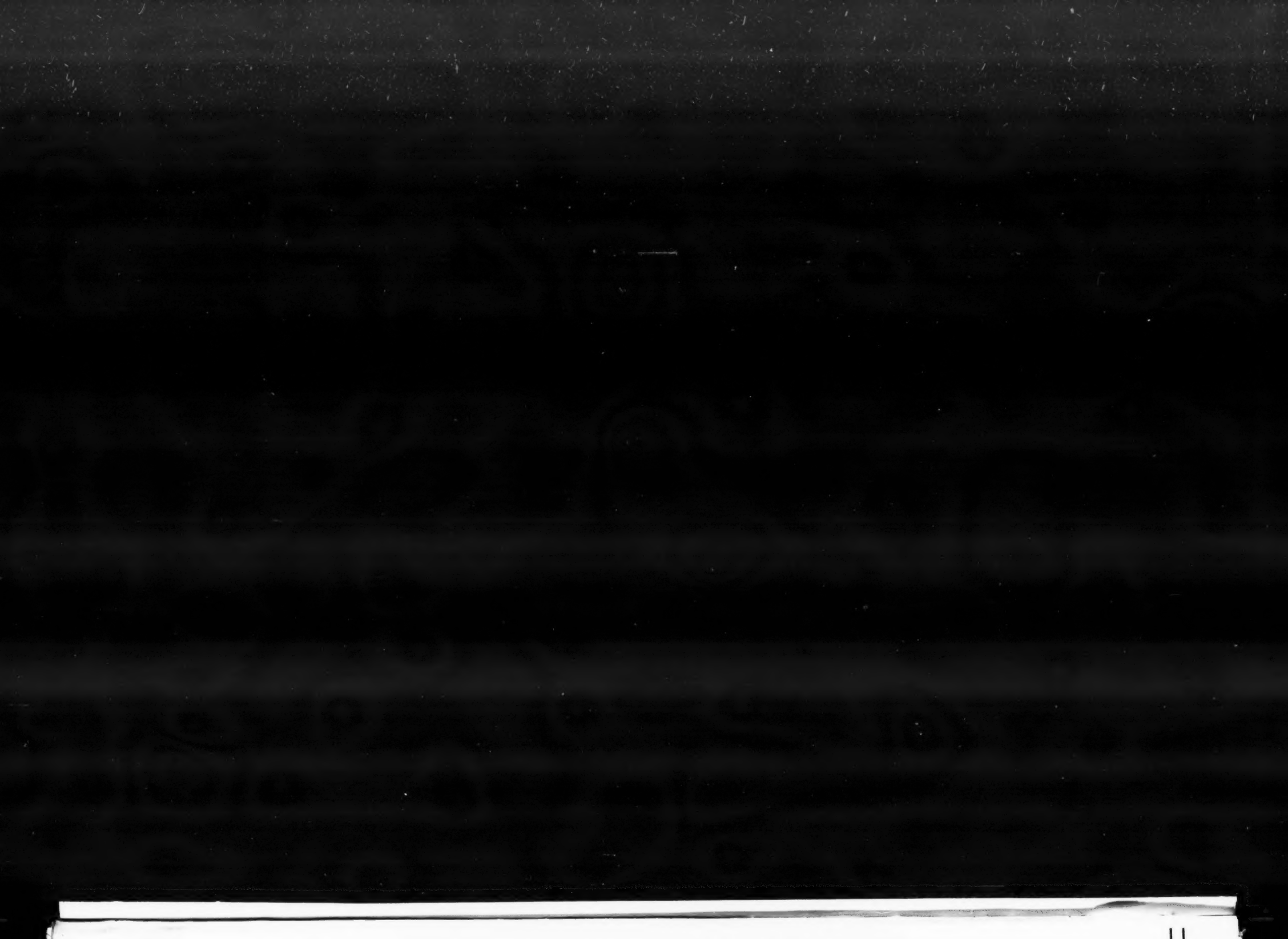
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